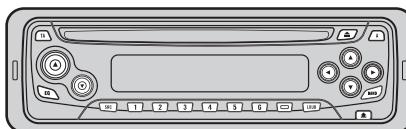


Service Manual



ORDER NO.
CRT3174

HIGH POWER CD PLAYER WITH RDS TUNER

DEH-1630R

XU/EW

DEH-1600R **XU/EW**

DEH-1600RB **XU/EW**

This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech.Module	Remarks
CX-3110	CRT3178	S10.1	CD Mech. Module : Circuit Description, Mech. Description, Disassembly



For details, refer to "Important symbols for good services".

PIONEER CORPORATION 4-1, Meguro 1-chome, Meguro-ku, Tokyo 153-8654, Japan

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SAFETY INFORMATION

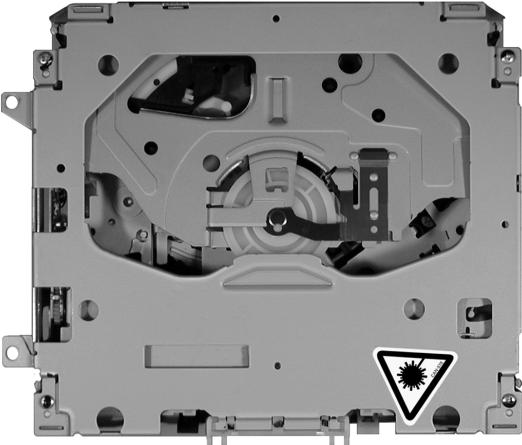
A This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

■ 1. Safety Precautions for those who Service this Unit.

- When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.

Caution:

- 1. During repair or tests, minimum distance of 13cm from the focus lens must be kept.
- 2. During repair or tests, do not view laser beam for 10 seconds or longer.
- 2. A "CLASS 1 LASER PRODUCT" label is affixed to the bottom of the player.
- 3. The triangular label is attached to the mechanism unit frame.



D **4. Specifications of Laser Diode**

Specifications of laser radiation fields to which human access is possible during service.
Wavelength = 800 nanometers

E **● CD Section Precaution**



1. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
2. To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY" on page 44.
3. After replacing the pickup unit, be sure to check the grating. (See p.41.)
4. In this product, because the memory capacity of the microcomputer is insufficient, the test mode is not installed. However grating of the pickup unit can be confirmed.

[Important symbols for good services]

In this manual, the symbols shown below indicate that adjustments, settings or cleaning should be made securely. When you find the procedures bearing any of the symbols, be sure to fulfill them:

1. Product safety



You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.

2. Adjustments



To keep the original performances of the product, optimum adjustments or specification confirmation is indispensable. In accordance with the procedures or instructions described in this manual, adjustments should be performed.

3. Cleaning



For optical pickups, tape-deck heads, lenses and mirrors used in projection monitors, and other parts requiring cleaning, proper cleaning should be performed to restore their performances.

4. Shipping mode and shipping screws



To protect the product from damages or failures that may be caused during transit, the shipping mode should be set or the shipping screws should be installed before shipping out in accordance with this manual, if necessary.

5. Lubricants, glues, and replacement parts



Appropriately applying grease or glue can maintain the product performances. But improper lubrication or applying glue may lead to failures or troubles in the product. By following the instructions in this manual, be sure to apply the prescribed grease or glue to proper portions by the appropriate amount. For replacement parts or tools, the prescribed ones should be used.



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1. SPECIFICATIONS

General

Power source	14.4 V DC (10.8 – 15.1 V allowable)
Grounding system	Negative type
Max. current consumption	10.0 A
Backup current	3 mA or less
Dimensions (W × H × D):	
Chassis	178 × 50 × 157 mm
Nose	188 × 58 × 19 mm
Weight	1.3 kg

Audio

Maximum power output	45 W × 4
Continuous power output ...	25 W × 4 (DIN 45324, +B=14.4 V)
Load impedance	4 Ω (4 – 8 Ω allowable)
Preout max output level/output impedance	2.2 V/1 kΩ
Equalizer (3-Band Parametric Equalizer):	
Low	
Frequency	40/80/100/160 Hz
Q Factor	0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain	±12dB
Mid	
Frequency	200/500/1k/2k Hz
Q Factor	0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain	±12dB
High	
Frequency	3.15k/8k/10k/12.5k Hz
Q Factor	0.35/0.59/0.95/1.15 (+6 dB when boosted)
Gain	±12dB
Loudness contour	
Low	+3.5 dB (100 Hz), +3 dB (10 kHz)
Mid	+10 dB (100 Hz), +6.5 dB (10 kHz)
High	+11 dB (100 Hz), +11 dB (10 kHz) (volume: -30 dB)

CD player

System	Compact disc audio system
Usable discs	Compact disc
Signal format:	

Sampling frequency 44.1 kHz

Number of quantization bits

..... 16; linear

Frequency characteristics ... 5 – 20,000 Hz (±1 dB)

Signal-to-noise ratio 94 dB (1 kHz) (IEC-A network)

Dynamic range 92 dB (1 kHz)

Number of channels 2 (stereo)

FM tuner

Frequency range	87.5 – 108.0 MHz
Usable sensitivity	8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	10 dBf (0.9 μV/75 Ω, mono)
Signal-to-noise ratio	75 dB (IEC-A network)
Distortion	0.3 % (at 65 dBf, 1 kHz, stereo)
	0.1 % (at 65 dBf, 1 kHz, mono)
Frequency response	30 – 15,000 Hz (±3 dB)
Stereo separation	45 dB (at 65 dBf, 1 kHz)
Selectivity	80 dB (±200 kHz)

MW tuner

Frequency range	531 – 1,602 kHz (9 kHz)
Usable sensitivity	18 μV (S/N: 20 dB)
Signal-to-noise ratio	65 dB (IEC-A network)

LW tuner

Frequency range	153 – 281 kHz
Usable sensitivity	30 μV (S/N: 20 dB)
Signal-to-noise ratio	65 dB (IEC-A network)



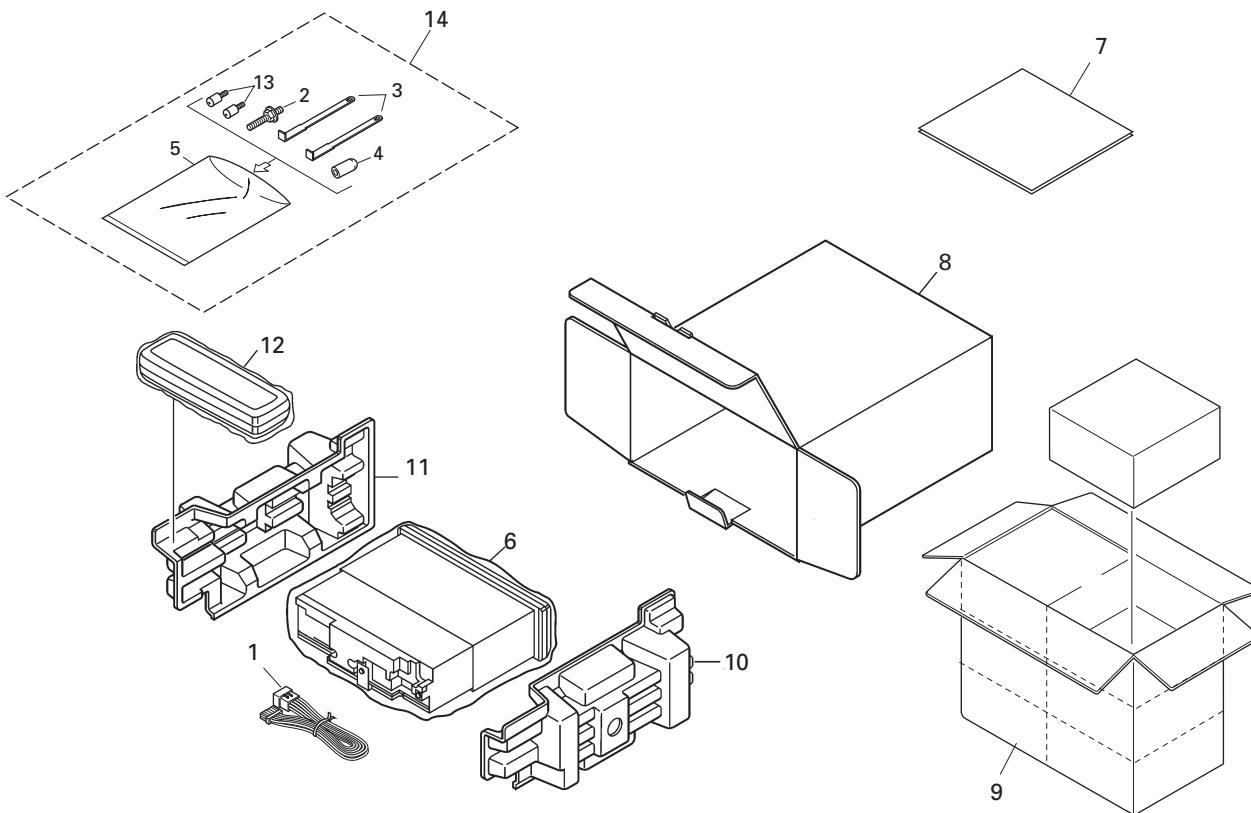
Note

Specifications and the design are subject to possible modifications without notice due to improvements. □

2. EXPLODED VIEWS AND PARTS LIST

A NOTES : • Parts marked by " * " are generally unavailable because they are not in our Master Spare Parts List.
 • Screw adjacent to  mark on the product are used for disassembly.
 • For the applying amount of lubricants or glue, follow the instructions in this manual.
 (In the case of no amount instructions, apply as you think it appropriate.)

2.1 PACKING



E (1) PACKING SECTION PARTS LIST

<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	Cord Assy	CDE7059	8	Carton	See Contrast table(2)
2	Screw	CBA1650	9	Contain Box	See Contrast table(2)
3	Handle	CNC5395	10	Protector	CHP2663
4	Bush	CNV3930	11	Protector	CHP2664
* 5	Polyethylene Bag	CEG1160	12	Case Assy	CXB3520
			13	Fixing Screw(M2x4)	CBA1488
			14	Accessory Assy	CEA3865
6	Polyethylene Bag	CEG-162			
7-1	Owner's Manual	YRD5001			
7-2	Installation Manual	YRD5006			
* 7-3	Passport	CRY1013			
* 7-4	Warranty Card	CRY1157			

(2) CONTRAST TABLE

DEH-1630R/XU/EW, DEH-1600R/XU/EW and DEH-1600RB/XU/EW are constructed the same except for the following:

Mark	NO	Description	DEH-1630R/XU/EW	DEH-1600R/XU/EW	DEH-1600RB/XU/EW
	8	Carton	YHG5002	YHG5001	YHG5009
	9	Contain Box	YHL5002	YHL5001	YHL5009

● Owner's Manual, Installation Manual

Model	Part No.	Language
DEH-1630R/XU/EW	YRD5001	English, Spanish, German, French, Italian, Dutch
DEH-1600R/XU/EW	YRD5006	English, Spanish, German, French, Italian, Dutch
DEH-1600RB/XU/EW		

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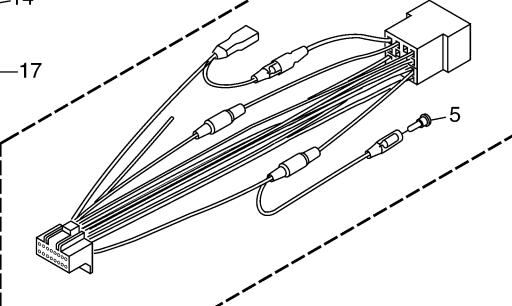
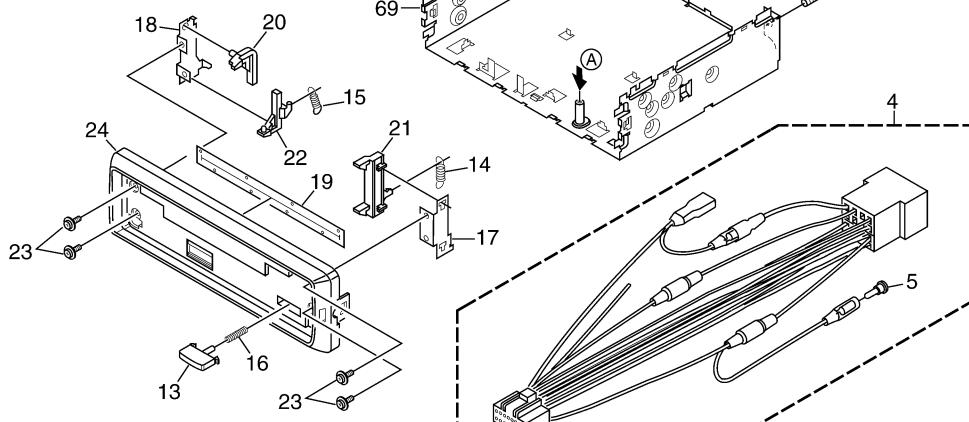
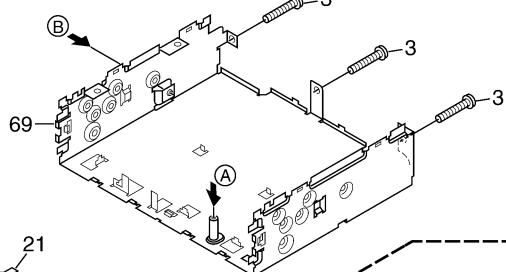
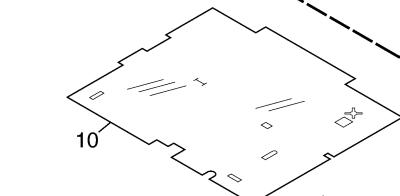
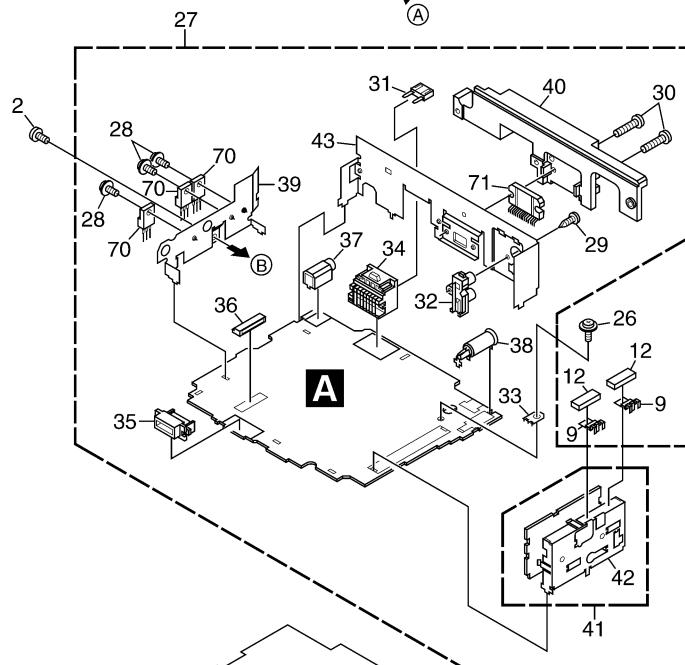
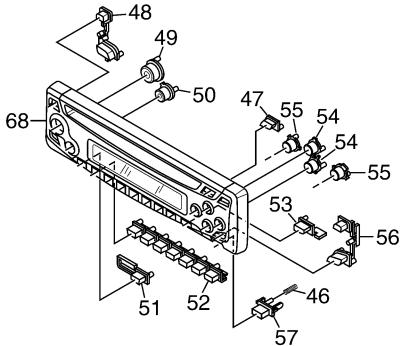
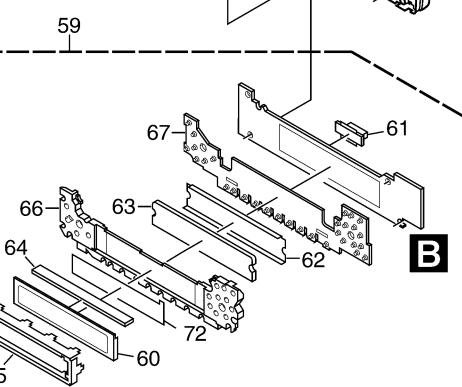
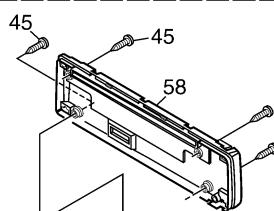
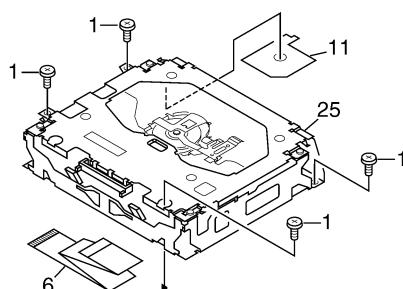
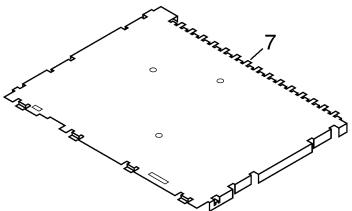
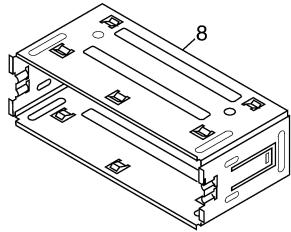
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2.2 EXTERIOR



(1) EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ26P060FTC	37	Connector(CN621)	CKS4124
2	Screw	BSZ30P060FTC	38	Antenna Jack(CN401)	CKX1056
3	Screw	BSZ30P200FTC	39	Holder	CND1328
4	Cord Assy	CDE7059	40	Heat Sink	CNR1668
5	Cap	CKX-003			
6	Cable	CDE7113	41	FM/AM Tuner Unit	CWE1645
7	Case	CNB2793	42	Holder	CND1054
8	Holder	CNC8659	43	Holder	YNC5002
9	Earth Plate	CNC8915	44	Detach Grille Assy	See Contrast table(2)
10	Insulator	CNM8059	45	Screw	Bpz20P100FZK
11	Insulator	CNM8174	46	Spring	CBH2210
12	Cushion	CNM8890	47	Button(CD EJECT)	YAC5001
13	Button	CAC4836	48	Button(TA, EQ)	YAC5003
14	Spring	CBH1835	49	Button(UP)	See Contrast table(2)
15	Spring	CBH2208	50	Button(DOWN)	See Contrast table(2)
16	Spring	CBH2367	51	Button(SRC)	YAC5011
17	Bracket	CNC6791	52	Button(1-6)	YAC5012
18	Holder	CNC8042	53	Button(LOUD)	YAC5014
19	Cover	CNM6276	54	Button(UP, DOWN)	See Contrast table(2)
20	Arm	CNV4692	55	Button(LEFT, RIGHT)	See Contrast table(2)
21	Arm	CNV4728	56	Button(A, BAND)	YAC5021
22	Arm	CNV5576	57	Button(DETACH)	YAC5023
23	Screw	IMS20P030FZK	58	Cover	See Contrast table(2)
24	Panel	See Contrast table(2)	59	Keyboard Unit	See Contrast table(2)
25	CD Mechanism Module(S10.1)	CXK5602	60	LCD(LCD1801)	See Contrast table(2)
26	Screw	ISS26P055FTC	61	Connector(CN1801)	CKS3580
27	Tuner Amp Unit	See Contrast table(2)	62	Sheet	CNM7932
28	Screw	ASZ26P060FTC	63	Lens	CNV7060
29	Screw	BPZ26P080FTC	64	Connector	CNV7369
30	Screw	BSZ26P160FTC	65	Holder	YNC5001
31	Fuse(10A)	CEK1208	66	Lighting Conductor	YNV5001
32	Pin Jack(CN352)	CKB1057	67	Rubber	YNV5003
33	Terminal(CN402)	CKF1059	68	Grille Unit	See Contrast table(2)
34	Plug(CN901)	CKM1376	69	Chassis Unit	See Contrast table(2)
35	Connector(CN831)	CKS3581	70	Transistor(Q911, 921, 991)	2SD2396
36	Connector(CN651)	CKS3835	71	IC(IC302)	TDA7386
			72	Sheet	See Contrast table(2)

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(2) CONTRAST TABLE

DEH-1630R/XU/EW, DEH-1600R/XU/EW and DEH-1600RB/XU/EW are constructed the same except for the following:

Mark	NO	Description	DEH-1630R/XU/EW	DEH-1600R/XU/EW	DEH-1600RB/XU/EW
	24	Panel	YNS5031	YNS5032	YNS5031
	27	Tuner Amp Unit	YWM5007	YWM5001	YWM5019
	44	Detach Grille Assy	YXA5026	YXA5014	YXA5032
	49	Button(UP)	YAC5007	YAC5005	YAC5007
	50	Button(DOWN)	YAC5010	YAC5008	YAC5010
	54	Button(UP, DOWN)	YAC5017	YAC5015	YAC5017
	55	Button(LEFT, RIGHT)	YAC5020	YAC5018	YAC5020
	58	Cover	YNS5020	YNS5021	YNS5020
B	59	Keyboard Unit	YWM5008	YWM5002	YWM5020
	60	LCD(LCD1801)	CAW1779	CAW1731	YAW5006
	68	Grille Unit	YXA5002	YXA5001	YXA5013
	69	Chassis Unit	YXA5036	YXA5035	YXA5037
	72	Sheet	Not used	Not used	CNM7881

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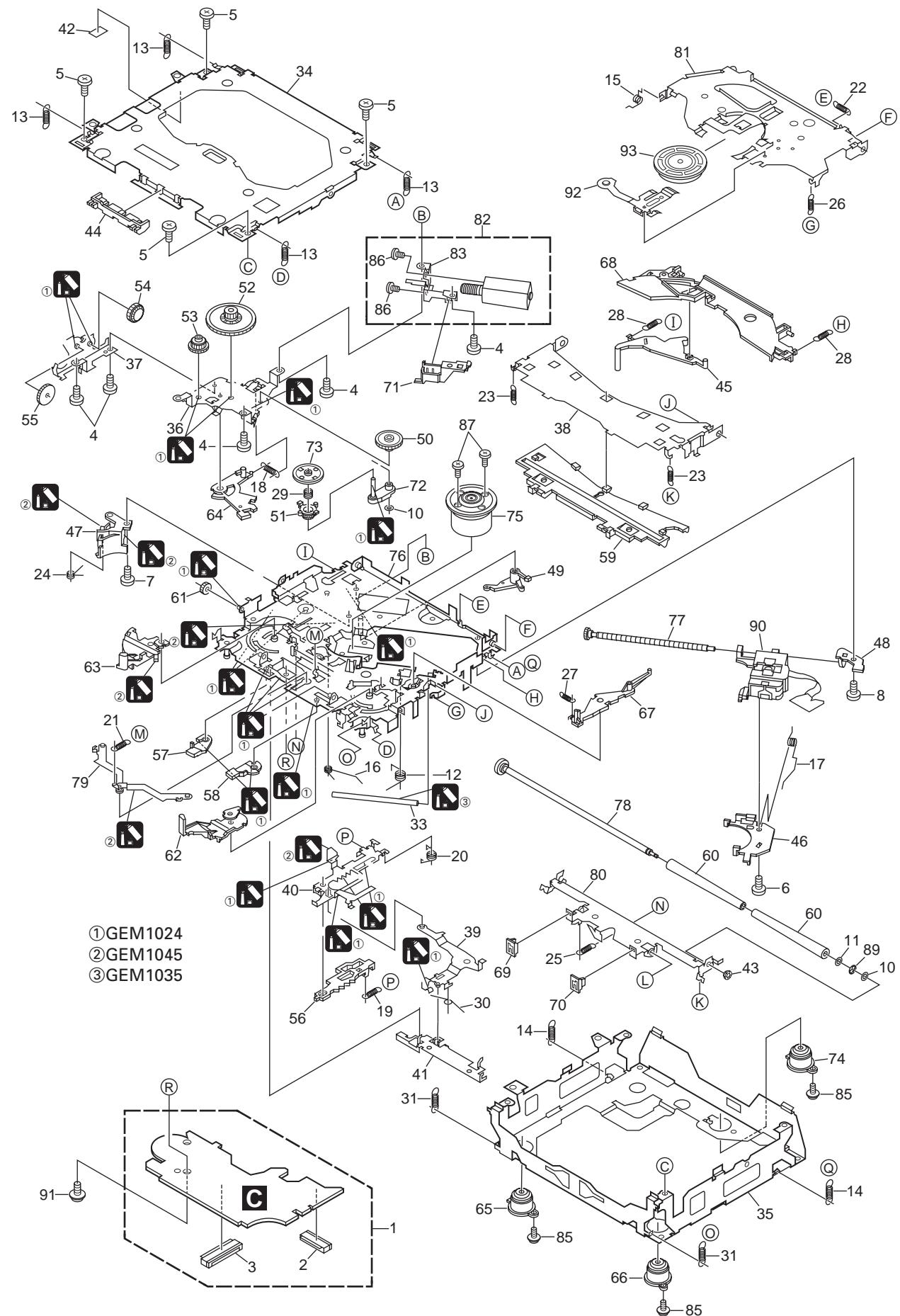
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2.3 CD MECHANISM MODULE



CD MECHANISM MODULE SECTION PARTS LIST

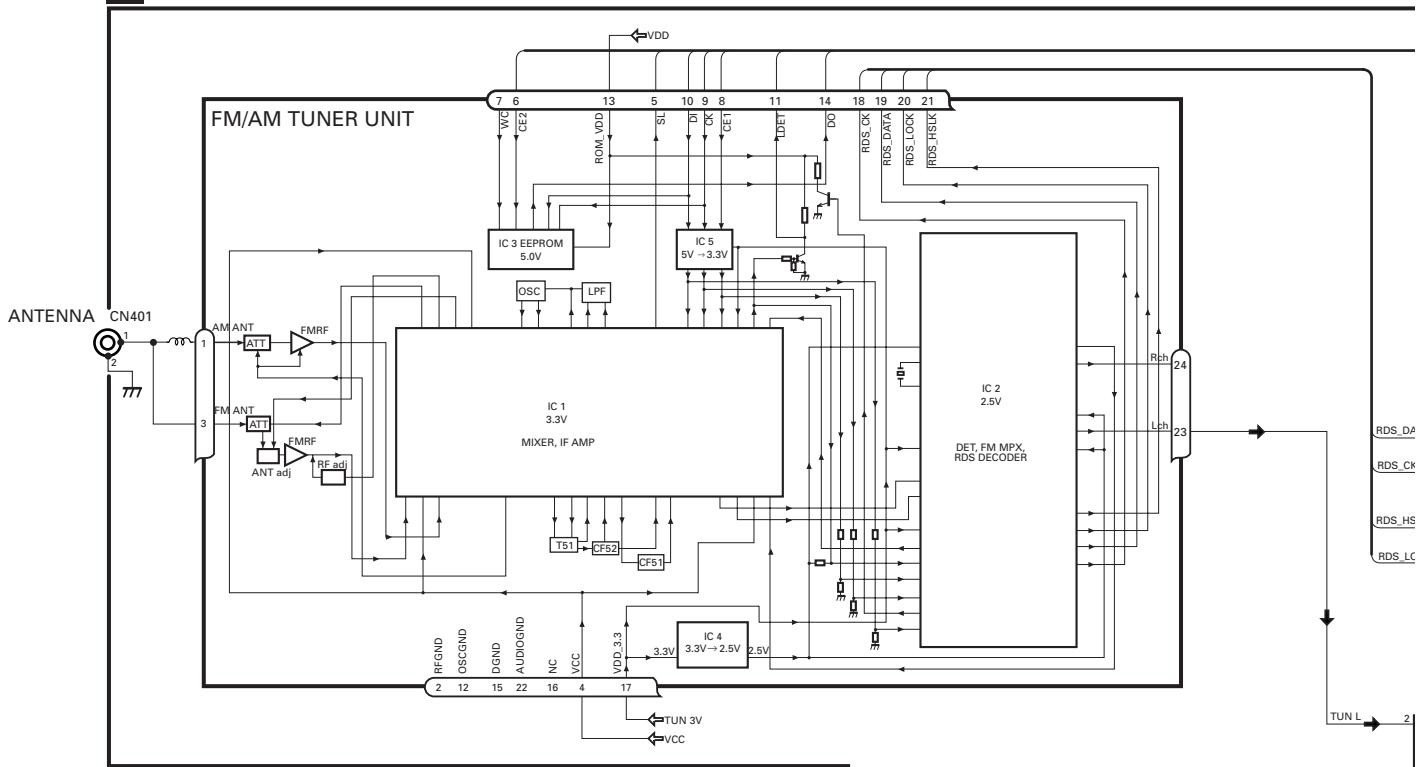
<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>	<u>Mark No.</u>	<u>Description</u>	<u>Part No.</u>
1	CD Core Unit(S10.1)	CWX2947	51	Gear	CNV7208
2	Connector(CN101)	CKS4182	52	Gear	CNV7209
3	Connector(CN701)	CKS4188	53	Gear	CNV7210
4	Screw	BMZ20P035FTC	54	Gear	CNV7211
5	Screw	BSZ20P040FTC	55	Gear	CNV7212
6	Screw(M2x4)	CBA1362	56	Rack	CNV7214
7	Screw(M2x3)	CBA1511	57	Arm	CNV7215
8	Screw(M2x3)	CBA1527	58	Arm	CNV7216
9	****		59	Guide	CNV7217
10	Washer	CBF1038	60	Roller	CNV7218
11	Washer	CBF1060	61	Gear	CNV7219
12	Spring	CBH2390	62	Arm	CNV7221
13	Spring	CBH2606	63	Arm	CNV7220
14	Spring	CBH2607	64	Arm	CNV7222
15	Spring	CBH2608	65	Damper	CNV7313
16	Spring	CBH2609	66	Damper	CNV7314
17	Spring	CBH2610	67	Arm	CNV7341
18	Spring	CBH2735	68	Arm	CNV7342
19	Spring	CBH2612	69	Guide	CNV7360
20	Spring	CBH2613	70	Guide	CNV7361
21	Spring	CBH2614	71	Holder	CNV7437
22	Spring	CBH2615	72	Arm	CNV7805
23	Spring	CBH2616	73	Gear	CNV7595
24	Spring	CBH2617	74	Damper	CNV7618
25	Spring	CBH2620	75	Motor Unit(M1)	CXB6007
26	Spring	CBH2621	76	Chassis Unit	CXC2318
27	Spring	CBH2641	77	Screw Unit	CXB8729
28	Spring	CBH2642	78	Gear Unit	CXC2397
29	Spring	CBH2643	79	Arm Unit	CXC2316
30	Spring	CBH2659	80	Arm	CND1896
31	Spring	CBH2688	81	Arm	CND1894
32	****		82	Motor Unit(M2)	CXB8933
33	Shaft	CLA4441	83	Bracket	CNC9985
34	Frame	CNC9962	84	****	
35	Frame	CNC9963	85	Screw(M2x5)	EBA1028
36	Bracket	CNC9966	86	Screw	JFZ20P020FTC
37	Bracket	CND1895	87	Screw	JGZ17P022FTC
38	Arm	CNC9968	88	****	
39	Arm	CND1909	89	Washer	YE20FTC
40	Lever	CND2032	90	Pickup Unit(P10)(Service)	CXX1647
41	Lever	CNC9984	91	Screw	IMS26P030FTC
42	Sheet	CNM8134	92	Spring	CBL1635
43	Collar	CNV7798	93	Clamper	CNV7197
44	Guide	CNV7799			
45	Arm	CNV7800			
46	Rack	CNV7199			
47	Holder	CNV7201			
48	Holder	CNV7202			
49	Arm	CNV7203			
50	Gear	CNV7207			

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

A

A TUNER AMP UNIT



B

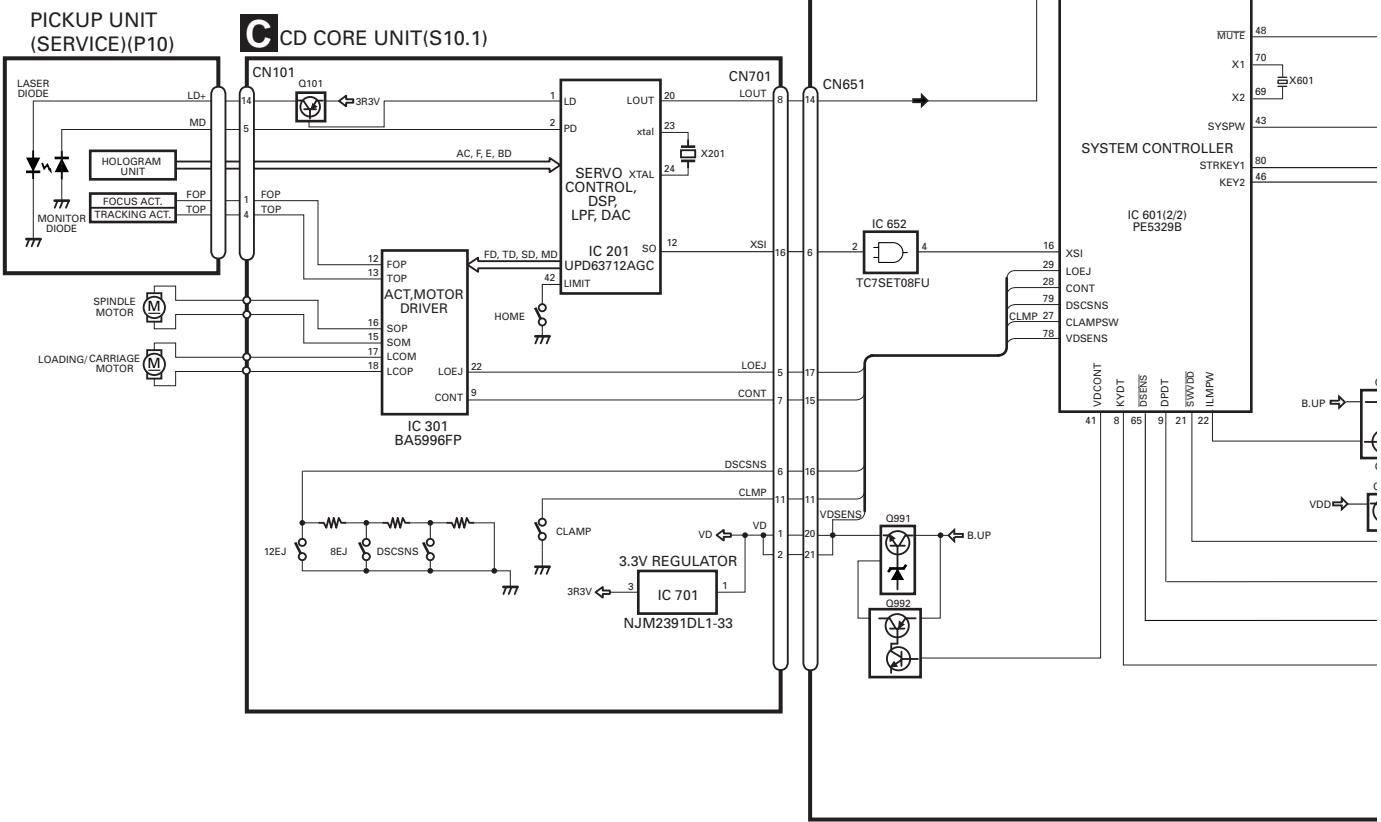
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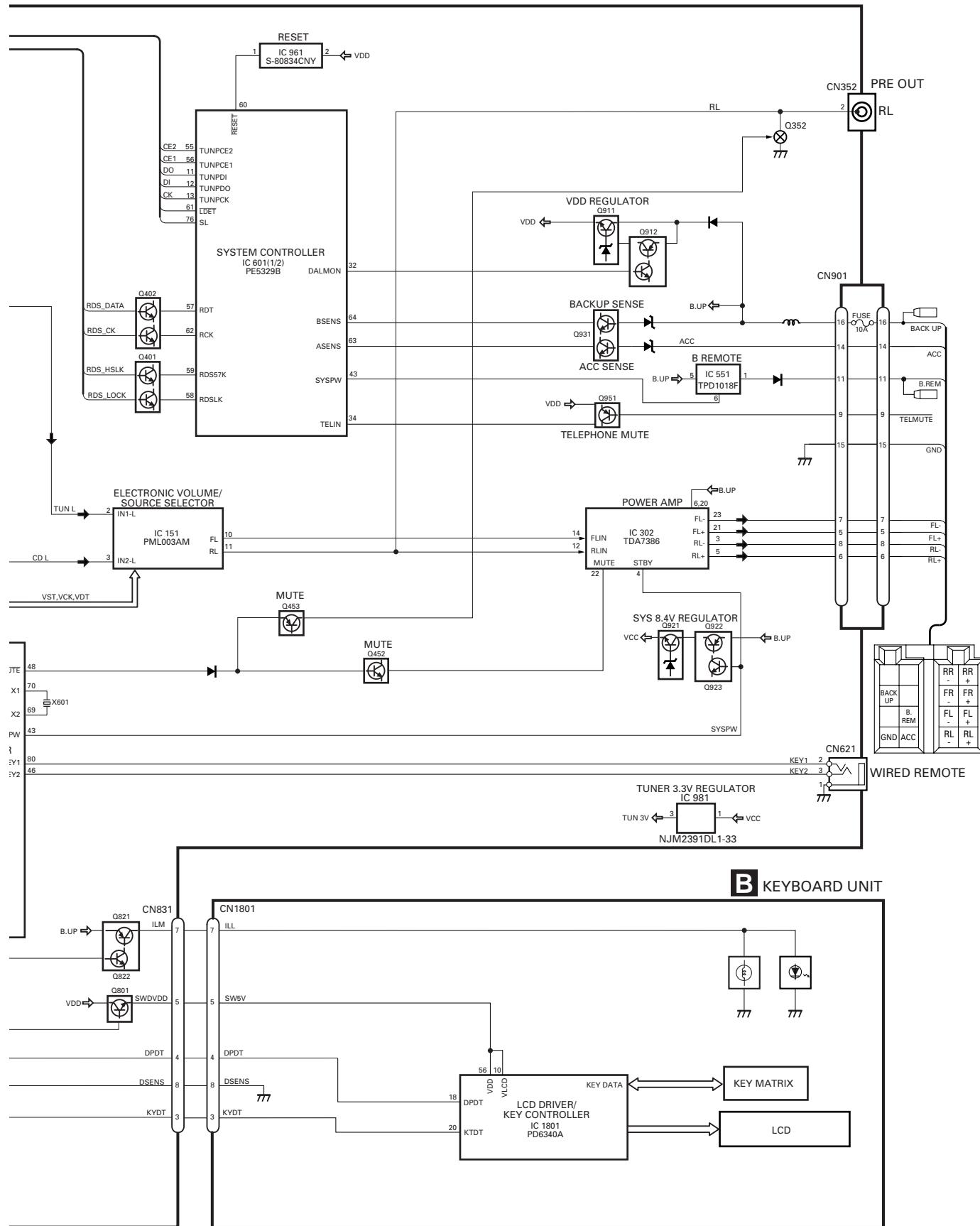
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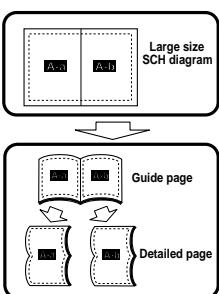
C CD CORE UNIT(S10.1)



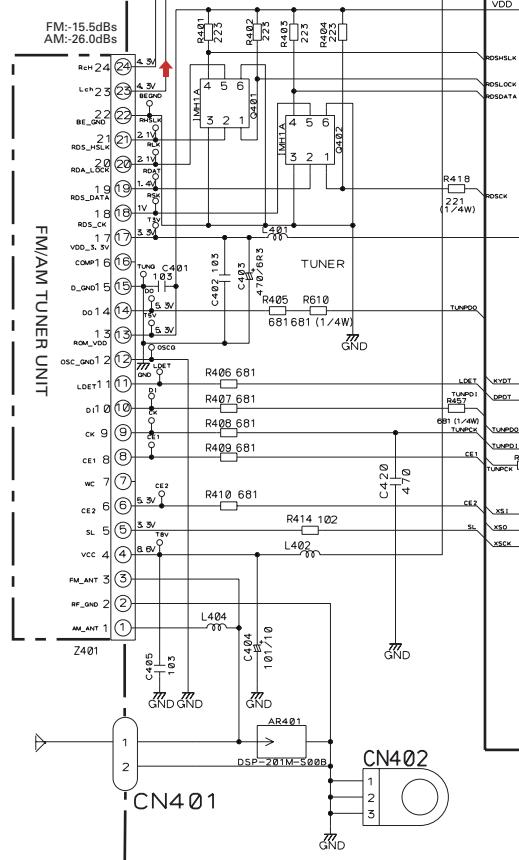


3.2 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to " EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



A-a

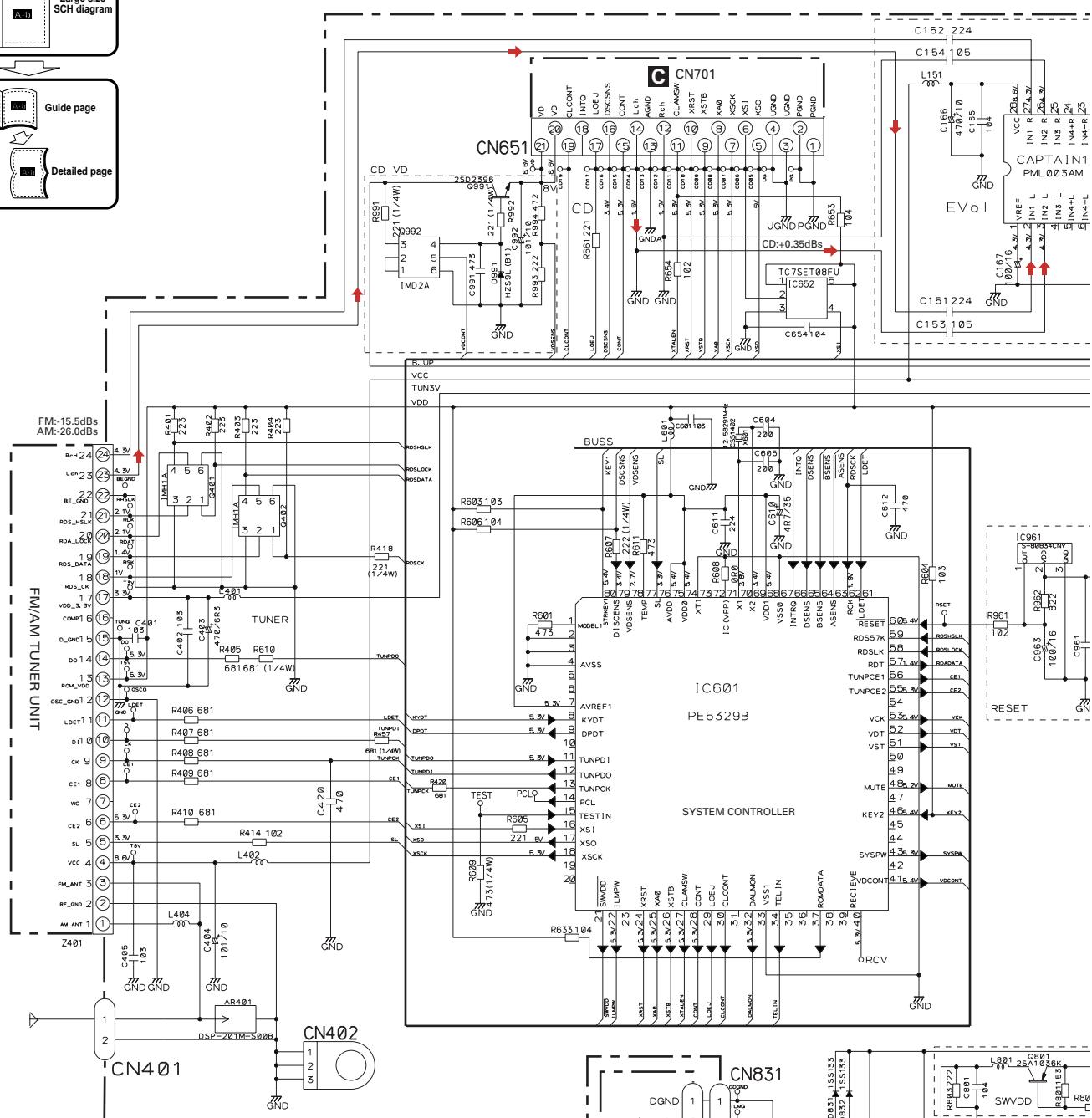


For resistors and capacitors in the circuit diagrams, their resistance values or capacitance values are expressed in codes:

Ex. *Resistors
Code Practical value
123 12k ohms
103 10k ohms

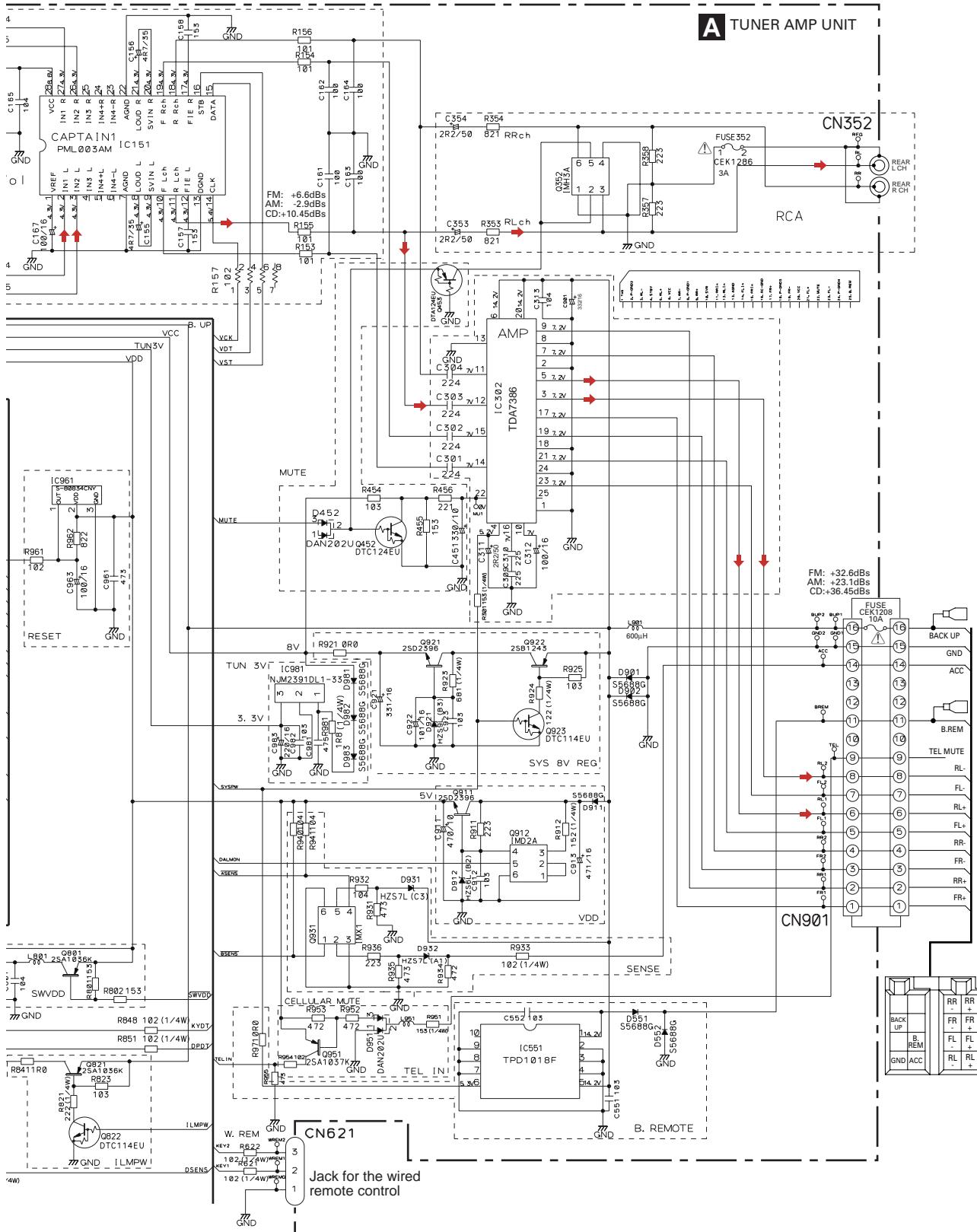
*Capacitors
Code Practical value
103 0.01uF
101/10 100uF/10V

The \triangle mark found on some component parts indicates the importance of the safety factor of the part.
Therefore, when replacing, be sure to use parts of identical designation.



A-b

A TUNER AMP UNIT



2 Jack for the wired
1 remote control

A-b

A

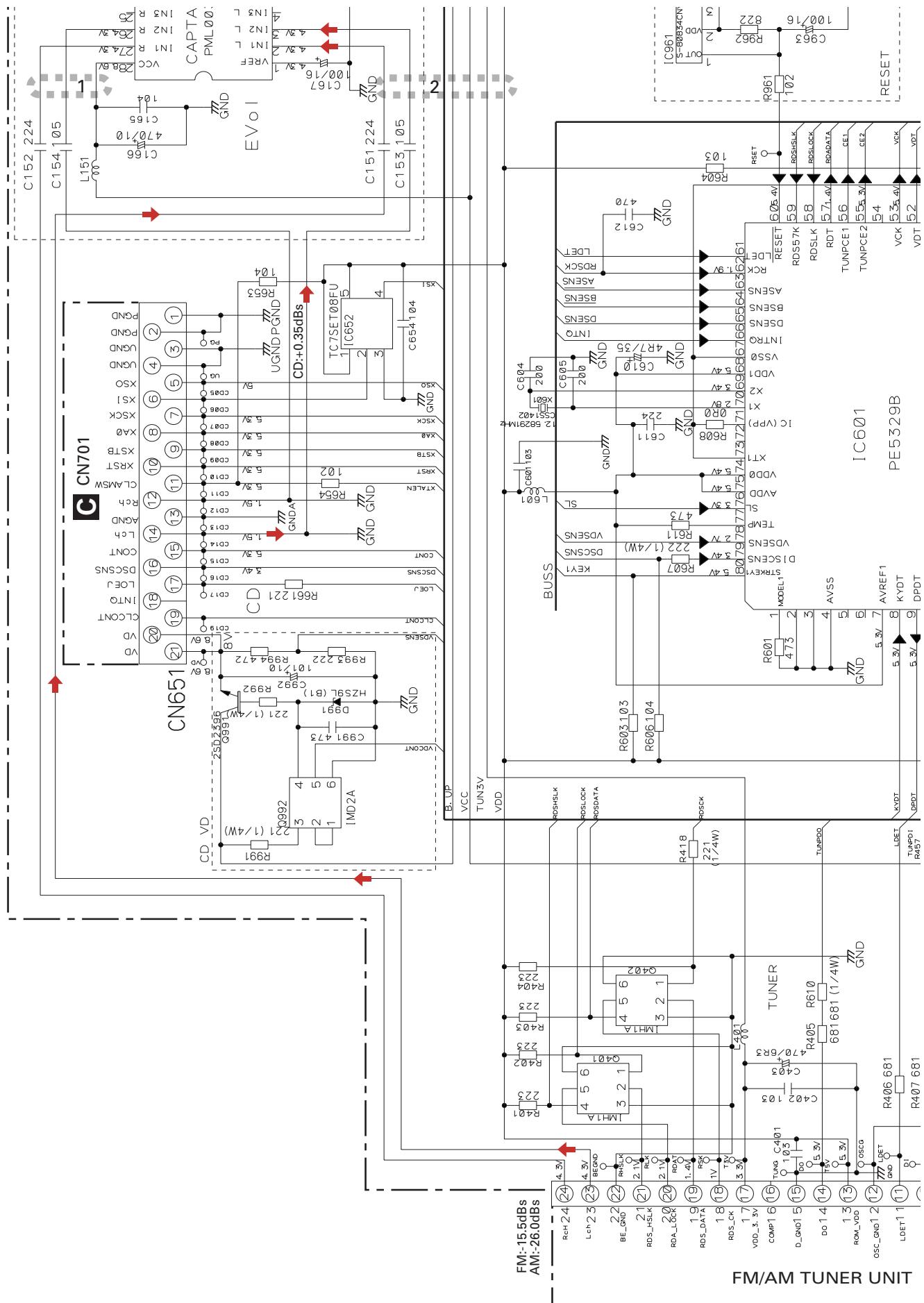
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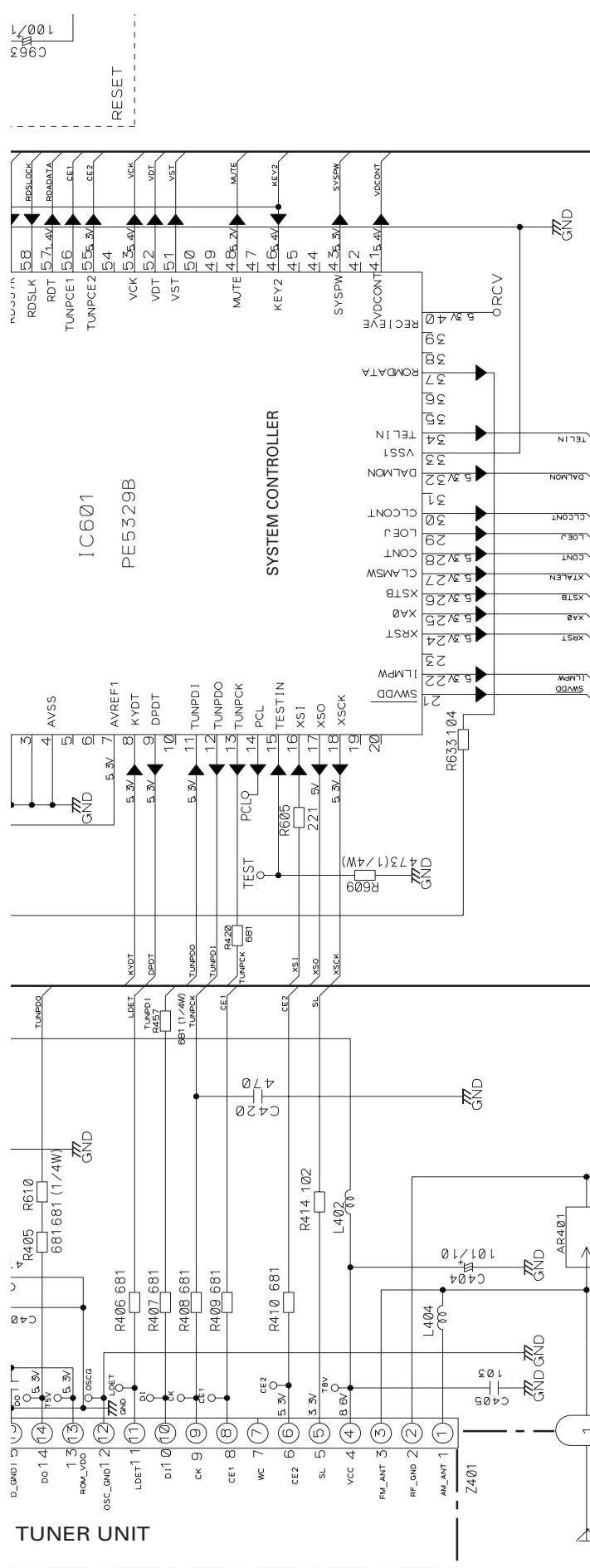
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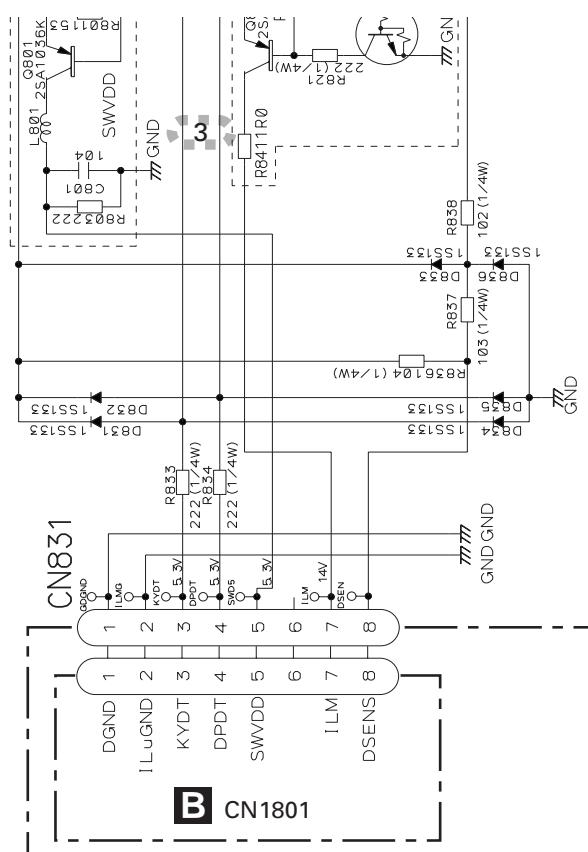
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TUNER UNIT



B CN1801

For resistors and capacitors in the circuit diagrams, their resistance values or capacitance values are expressed in codes:

*Resistors		*Capacitors	
Code	Practical value	Code	Practical value
123	12k ohms	103	0.01uF
103	10k ohms	101/10	100uF/10V

The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

DEH-1630R/XU/EW

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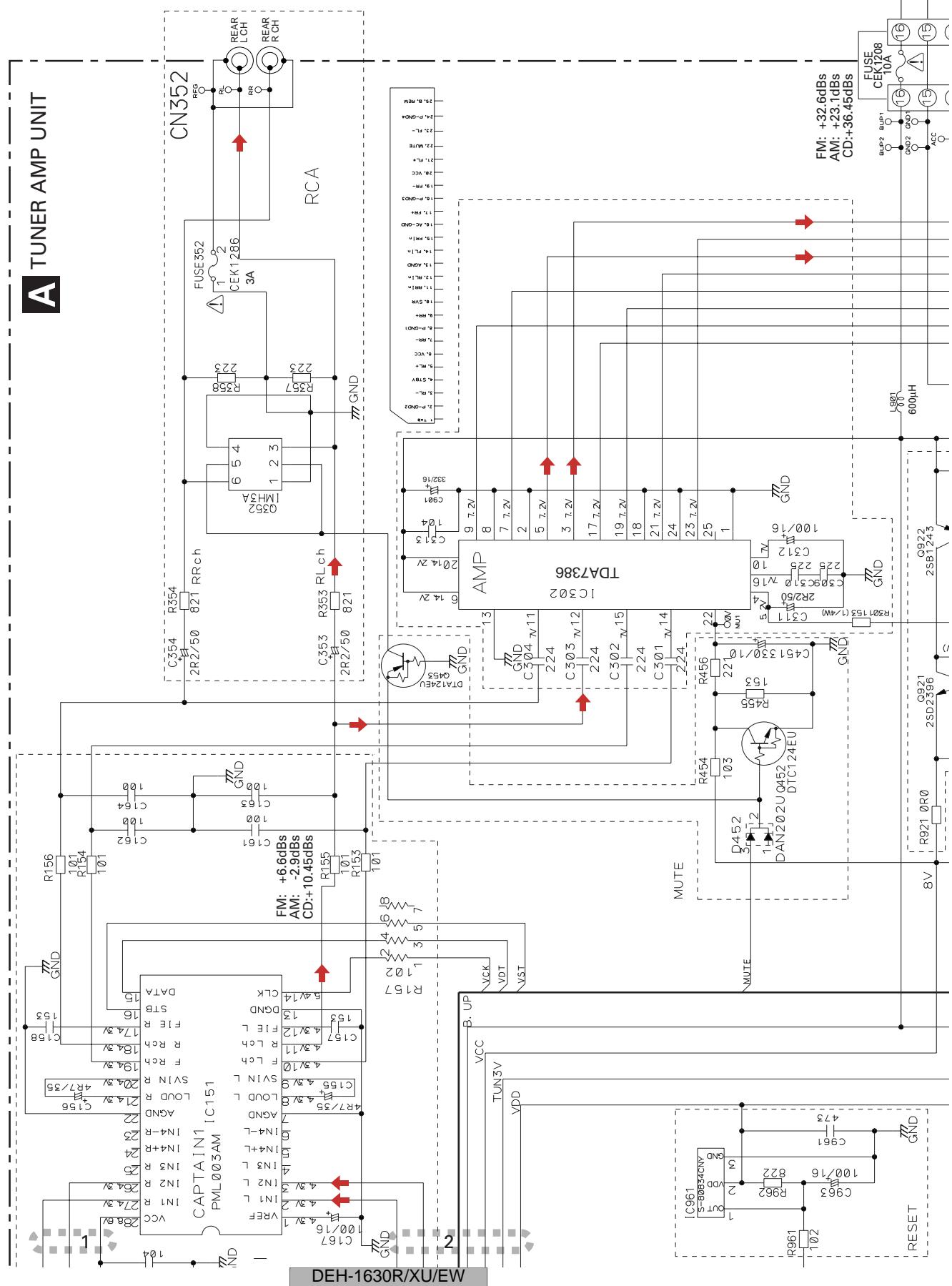
C

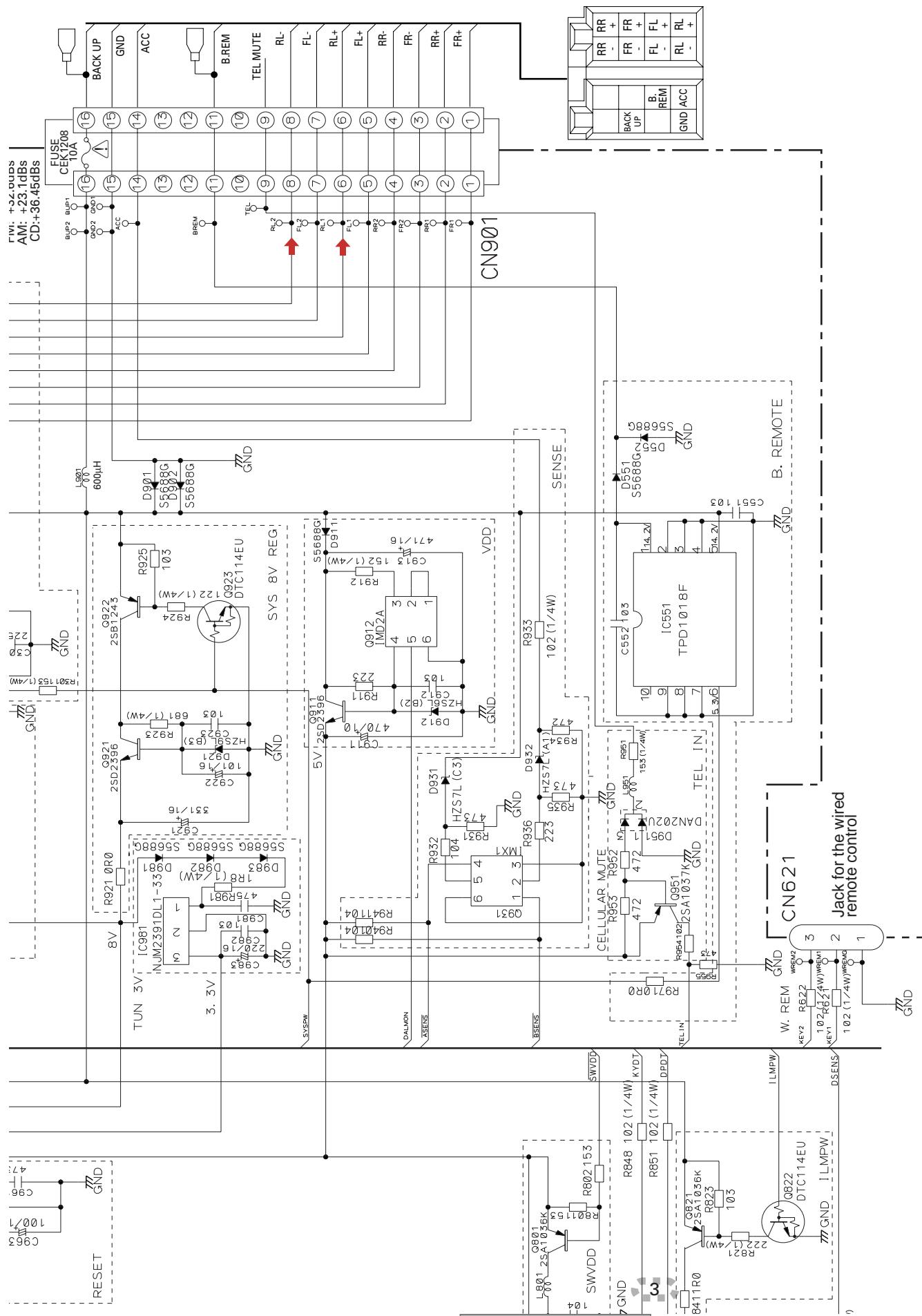
2

二

二

A TUNER AMP UNIT





A-b

3.3 KEYBOARD UNIT

A

For resistors and capacitors in the circuit diagrams, their resistance values or capacitance values are expressed in codes:

Ex. *Resistors

Code	Practical value
123	12k ohms
103	10k ohms

*Capacitors

Code	Practical value
103	0.01uF
101/10	100uF/10V

	ILM COLOUR	IL1801,1802	D1803-18
DEH-1630R/XU/EW	VW RED (SR)	CEL1662	SML31
DEH-1600R/XU/EW	GREEN (PG)	CEL1651	SML31
DEH-1600RB/XU/EW	VW RED (SR)	CEL1662	SML31

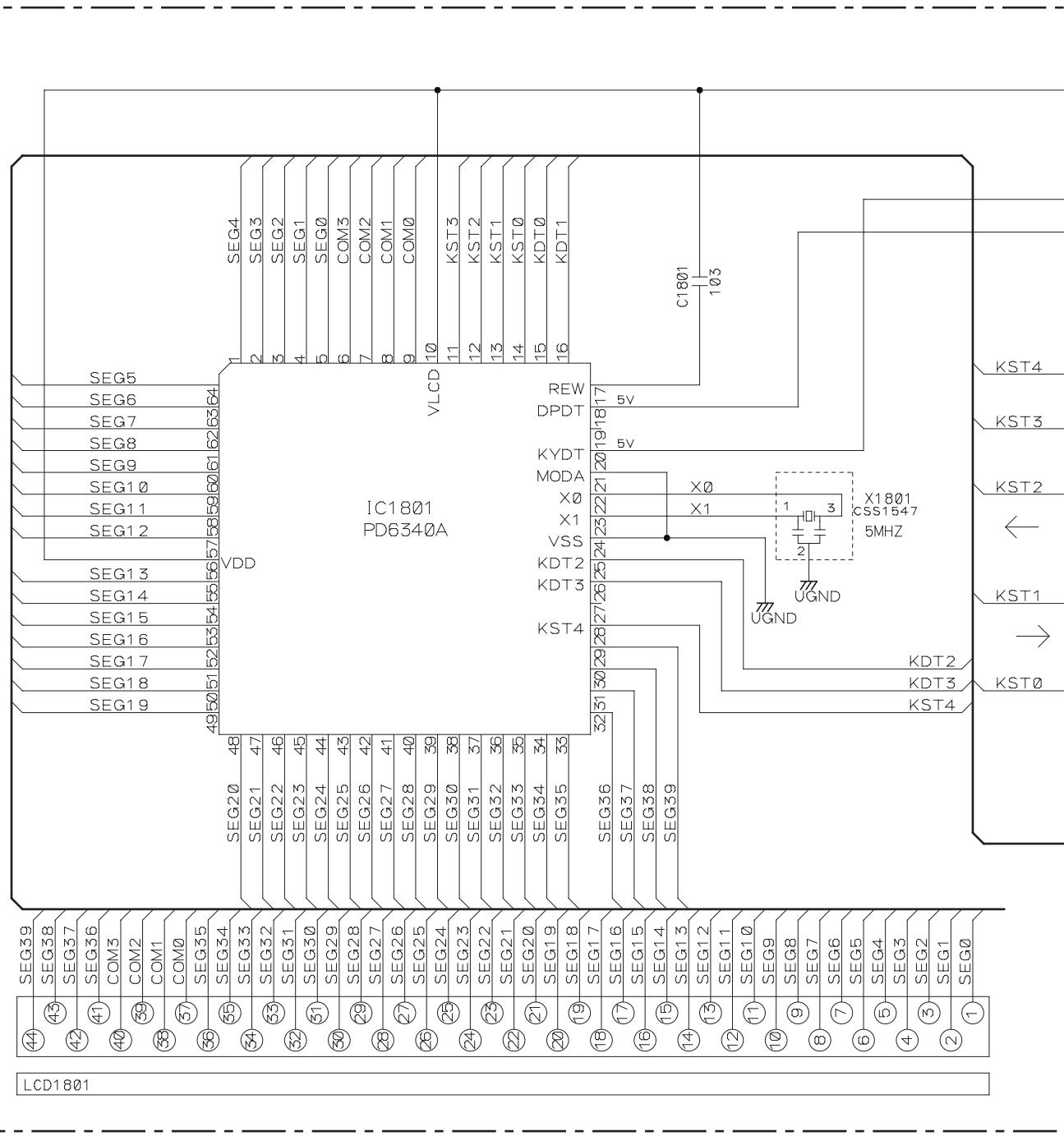
B

C

D

E

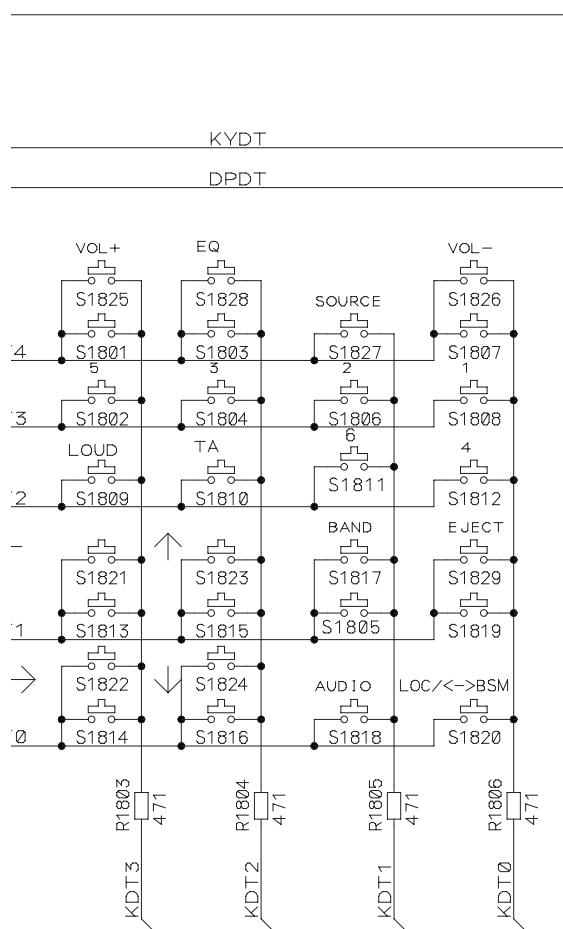
F



B

03-1809	R1816-1818	LCD1801
L310VT	181	CAW1779
L310PT	151	CAW1731
-310VT	181	YAW5006

B KEYBOARD UNIT



D1801
MA152WK
D1802
MA152WA
UGND

R1801 222
R1802 222

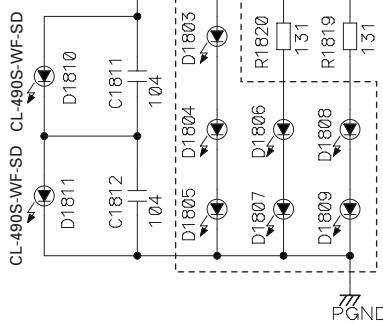
CN1801

1 uGND
2 GND
3 KYDT
4 5.1V
5 5.1V
6 5.1V
7 NC
8 ILL
DSENS

A CN1801

PGND

UGND

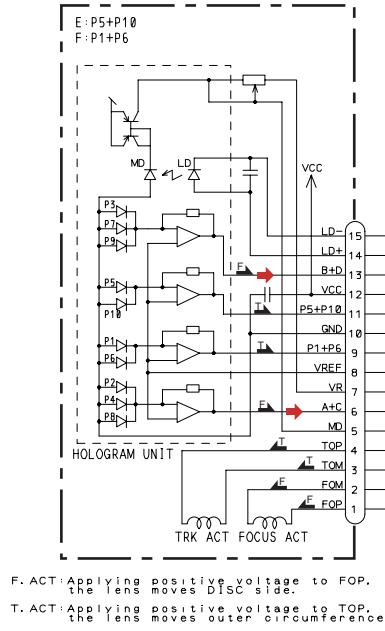


B

3.4 CD MECHANISM MODULE

A

PICKUP UNIT(P10)(SERVICE)



CN101

REF0

GND

V+3A

V+3B

GND

3R3VA

GND

3R3V

GND

MOTOR DRIVER

3.3V REGULATOR

IC781

NJM2391DL1-33

1SR154-480

D781

C785

NEQ

10/6R5

C783

R1

C781

100/16

C780

C782

R382

8R2K

C784

2.2Kp

R383

2.2Kp

R384

1.5K

C785

1.5K

R385

4.7Kp

C786

1.5K

R387

1.5K

C788

1.5K

R389

1.5K

C789

1.5K

R390

1.5K

C790

1.5K

R391

1.5K

C791

1.5K

R392

1.5K

C793

1.5K

R394

1.5K

C795

1.5K

R396

1.5K

C797

1.5K

R398

1.5K

C799

1.5K

R400

1.5K

C801

1.5K

R402

1.5K

C803

1.5K

R404

1.5K

C805

1.5K

R406

1.5K

C807

1.5K

R408

1.5K

C809

1.5K

R410

1.5K

C811

1.5K

R412

1.5K

C813

1.5K

R414

1.5K

C815

1.5K

R416

1.5K

C817

1.5K

R418

1.5K

C819

1.5K

R420

1.5K

C821

1.5K

R422

1.5K

C823

1.5K

R424

1.5K

C825

1.5K

R426

1.5K

C827

1.5K

R428

1.5K

C829

1.5K

R430

1.5K

C831

1.5K

R432

1.5K

C833

1.5K

R434

1.5K

C835

1.5K

R436

1.5K

C837

1.5K

R438

1.5K

C839

1.5K

R440

1.5K

C841

1.5K

R442

1.5K

C843

1.5K

R444

1.5K

C845

1.5K

R446

1.5K

C847

1.5K

R448

1.5K

C849

1.5K

R450

1.5K

C851

1.5K

R452

1.5K

C853

1.5K

R454

1.5K

C855

1.5K

R456

1.5K

C857

1.5K

R458

1.5K

C859

1.5K

R460

1.5K

C861

1.5K

R462

1.5K

C863

1.5K

R464

1.5K

C865

1.5K

R466

1.5K

C867

1.5K

R468

1.5K

C869

1.5K

R470

1.5K

C871

1.5K

R472

1.5K

C873

1.5K

R474

1.5K

C875

1.5K

R476

1.5K

C877

1.5K

R478

1.5K

C879

1.5K

R480

1.5K

C881

1.5K

R482

1.5K

C883

1.5K

R484

1.5K

C885

1.5K

R486

1.5K

C887

1.5K

R488

1.5K

C889

1.5K

R490

1.5K

C891

1.5K

R492

1.5K

C893

1.5K

R494

1.5K

C895

1.5K

R496

1.5K

C897

1.5K

R498

1.5K

C899

1.5K

R500

1.5K

C901

1.5K

R502

1.5K

C903

1.5K

R504

1.5K

C905

1.5K

R506

1.5K

C907

1.5K

R508

1.5K

C909

1.5K

R510

1.5K

C911

1.5K

R512

1.5K

C913

1.5K

R514

1.5K

C915

1.5K

R516

1.5K

C917

1.5K

R518

1.5K

C919

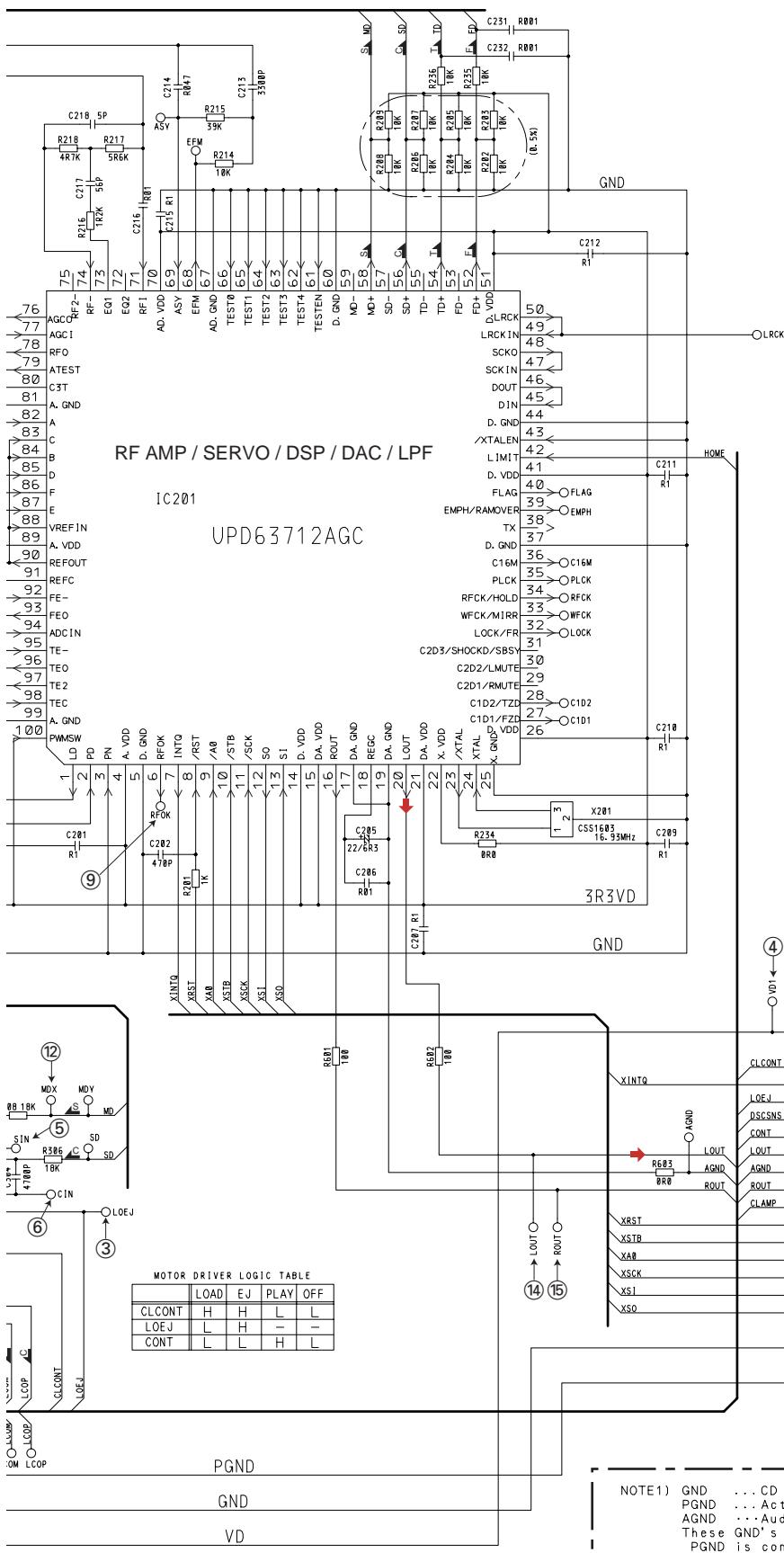
1.5K

R520

1.5K

C921

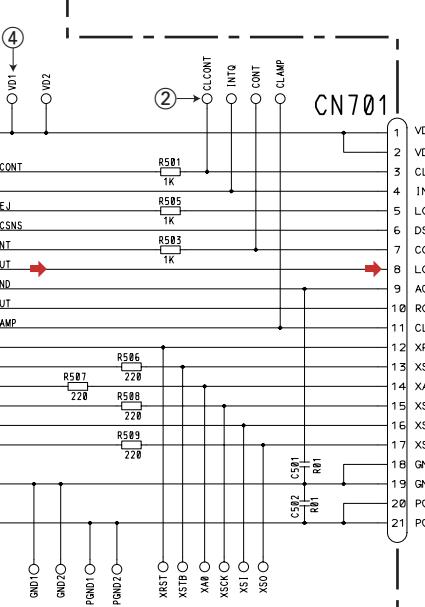
1.5K



A
CN651
1/0

8. 3V
8. 3V

3 CLCONT
4 INTQ
5 LOEJ
6 DSCSNS
7 CONT
8 LOUT
9 AGND
10 ROUT
11 CLAMP
12 XRST
13 XSTB
14 XA0
15 XSCK
16 XSI
17 XSO
18 GND
19 GND
20 PGND
21 PGND



C

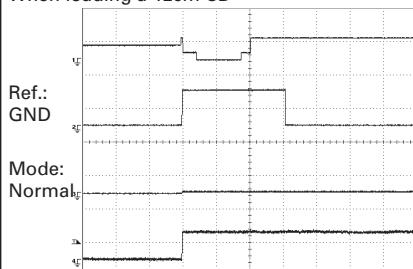
● Waveforms

Note : 1. The encircled numbers denote measuring points in the circuit diagram.
 2. Reference voltage REFO1(1.65V)

A

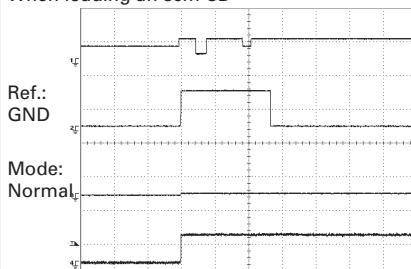
① DSCSNS	5V/div	500ms/div
② CLCONT	5V/div	
③ LOEJ	5V/div	
④ VD	10V/div	

When loading a 12cm CD



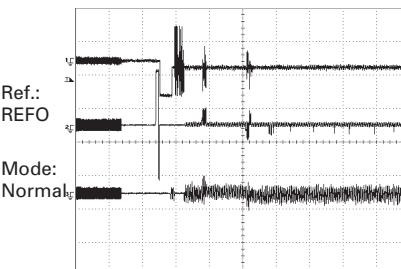
① DSCSNS	5V/div	500ms/div
② CLCONT	5V/div	
③ LOEJ	5V/div	
④ VD	10V/div	

When loading an 8cm CD



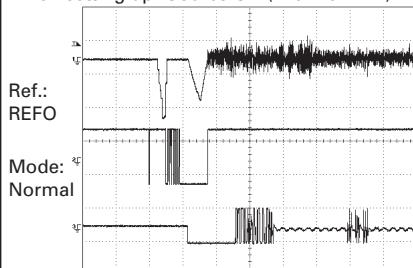
⑤ SIN	1V/div	2s/div
⑥ CIN	500mV/div	
⑦ TIN	500mV/div	

When setting up after loading a 12cm CD-DA disc



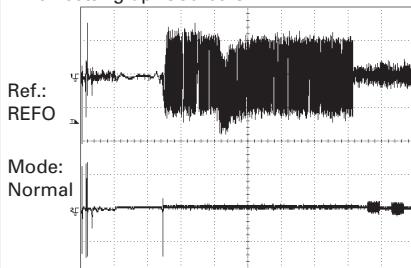
⑧ FIN	200mV/div	500ms/div
⑨ RFOK	2V/div	
⑤ SIN	2V/div	

When setting up "Source On"(12cm CD-DA)



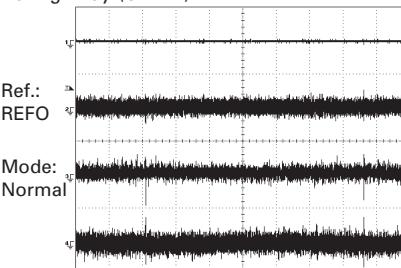
⑩ TE	500mV/div	200ms/div
⑪ FE	500mV/div	

When setting up "Source On"



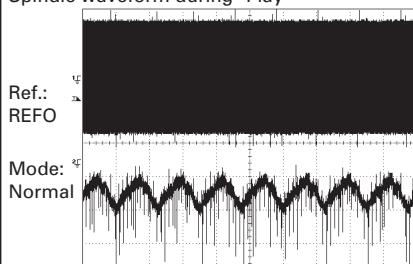
⑪ FE	500mV/div	20ms/div
⑧ FIN	500mV/div	
⑩ TE	500mV/div	
⑦ TIN	500mV/div	

During "Play"(CD-DA)



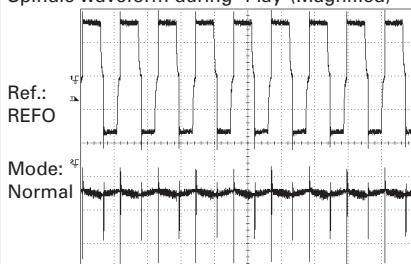
⑫ MDX	500mV/div	5ms/div
⑤ SIN	1V/div	

Spindle waveform during "Play"



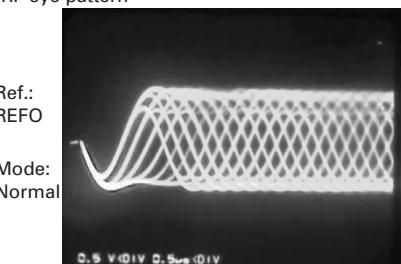
⑫ MDX	500mV/div	5μs/div
⑤ SIN	1V/div	

Spindle waveform during "Play"(Magnified)



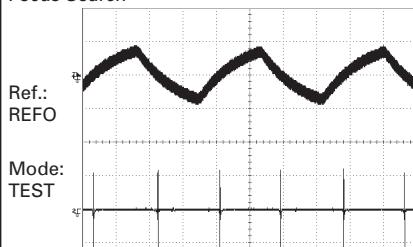
⑬ RFAGC	500mV/div	0.5μs/div
---------	-----------	-----------

RF eye pattern



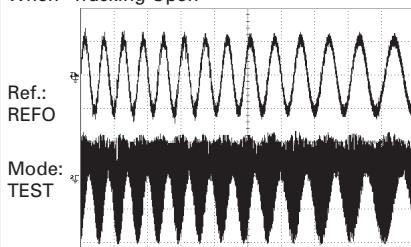
⑧ FIN	500mV/div	200ms/div
⑪ FE	500mV/div	

Focus Search



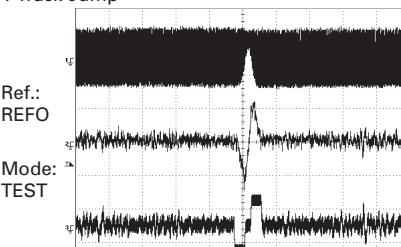
⑩ TE	500mV/div	2ms/div
⑬ RFAGC	500mV/div	
⑦ TIN	500mV/div	

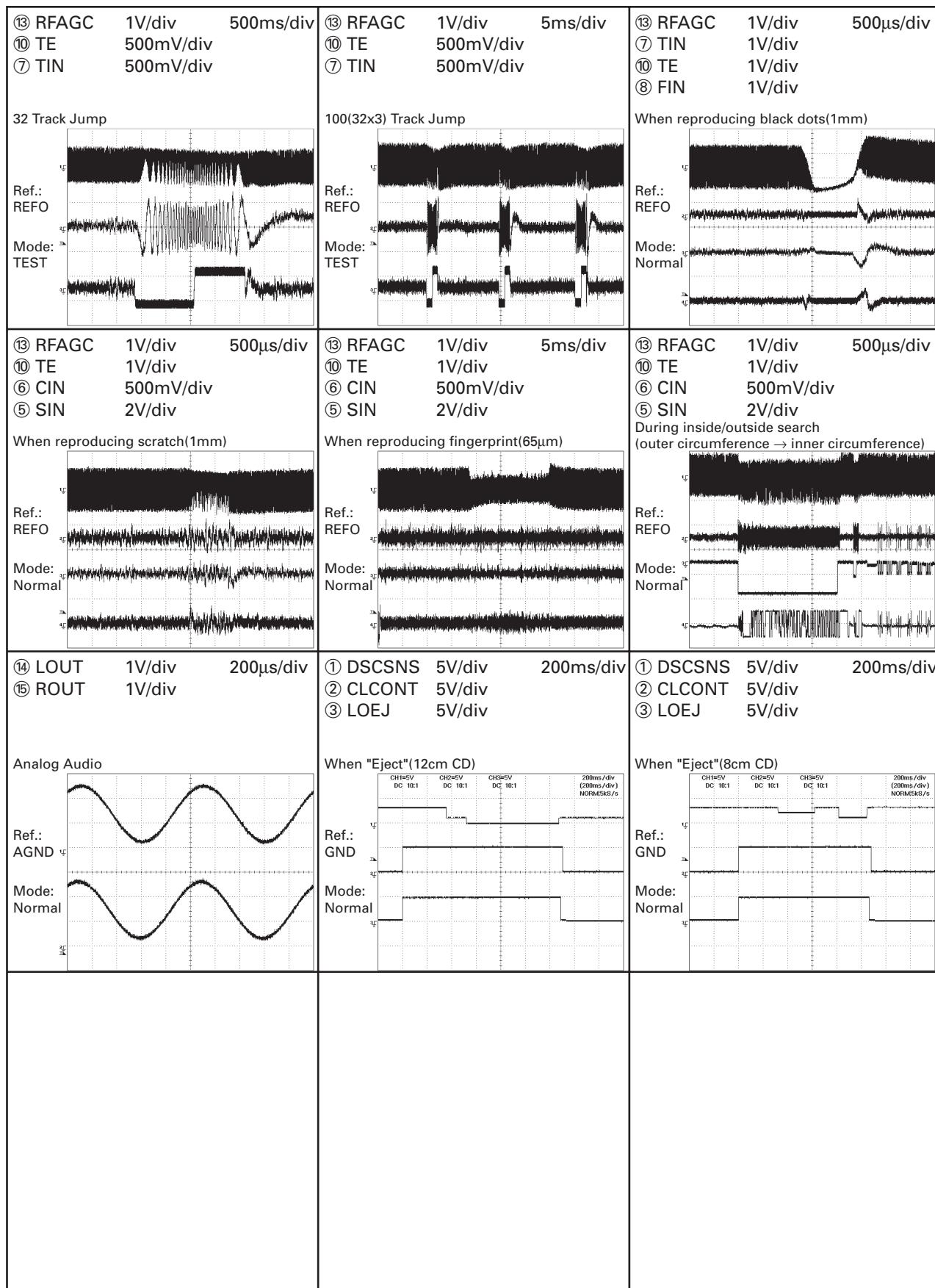
When "Tracking Open"



⑬ RFAGC	1V/div	500μs/div
⑩ TE	500mV/div	
⑦ TIN	500mV/div	

1 Track Jump





4. PCB CONNECTION DIAGRAM

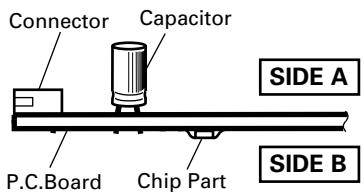
4.1 TUNER AMP UNIT

A

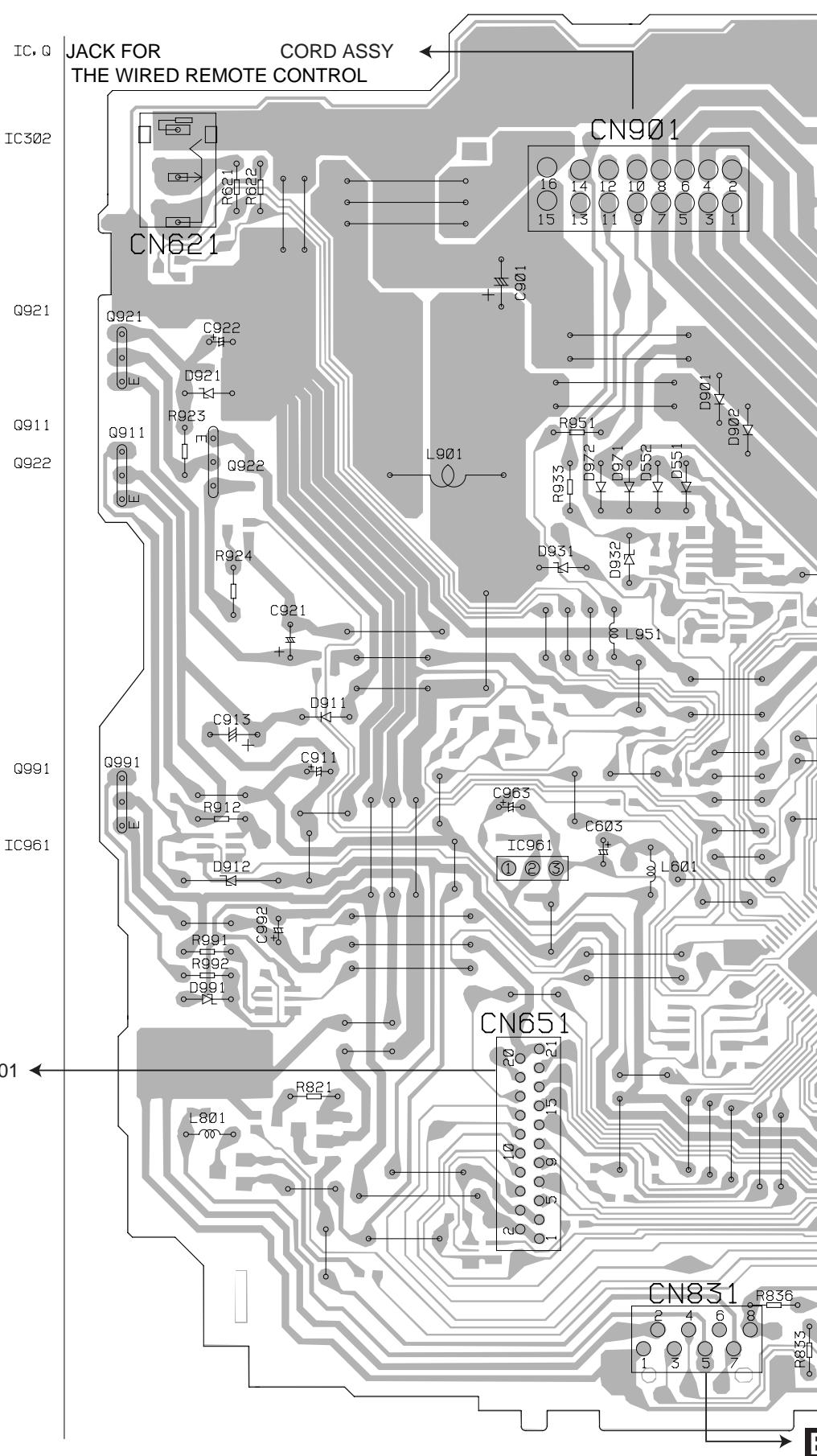
A TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

- 1.The parts mounted on this PCB include all necessary parts for several destination.
For further information for respective destinations, be sure to check with the schematic diagram.
- 2.Viewpoint of PCB diagrams



B



C

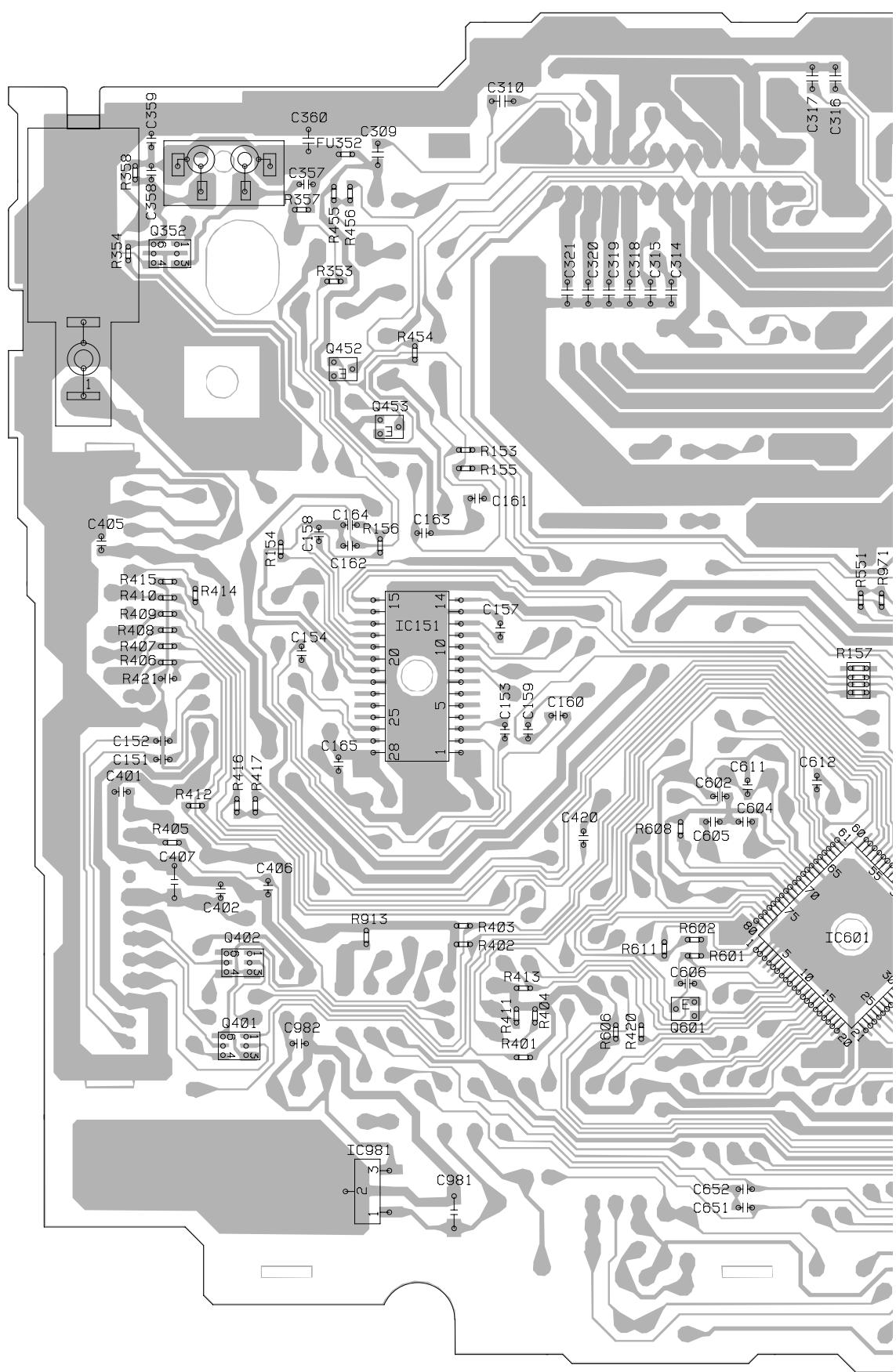
D

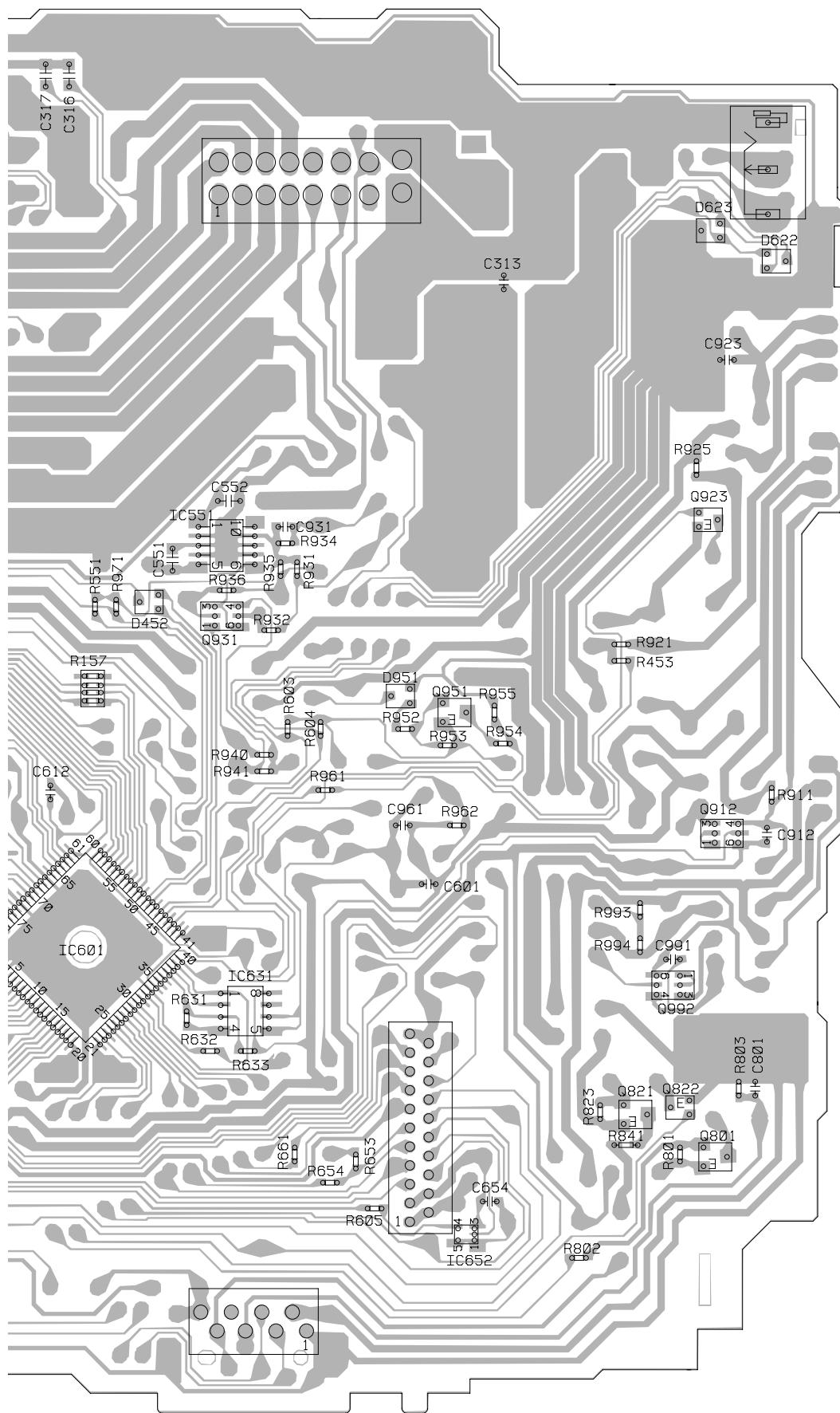
E

F

A

A TUNER AMP UNIT



SIDE B

IC, Q

Q352

Q452

Q453

Q923
IC551

IC151 Q931

Q951

Q912

Q402 IC601
IC631Q992
Q401
Q601

Q821 Q822

Q801

IC981

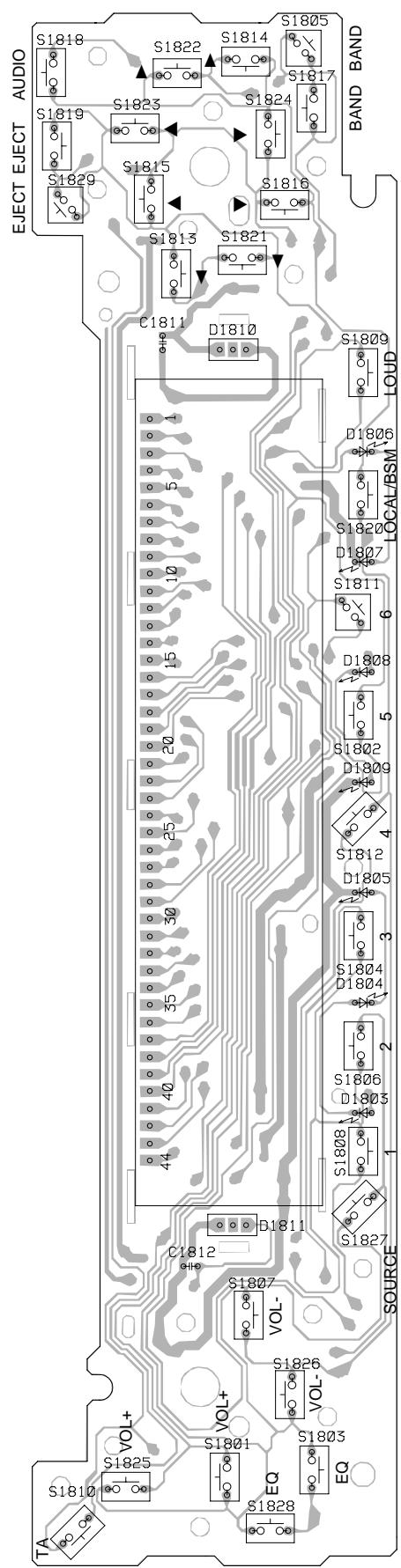
IC652

A

4.2 KEYBOARD UNIT

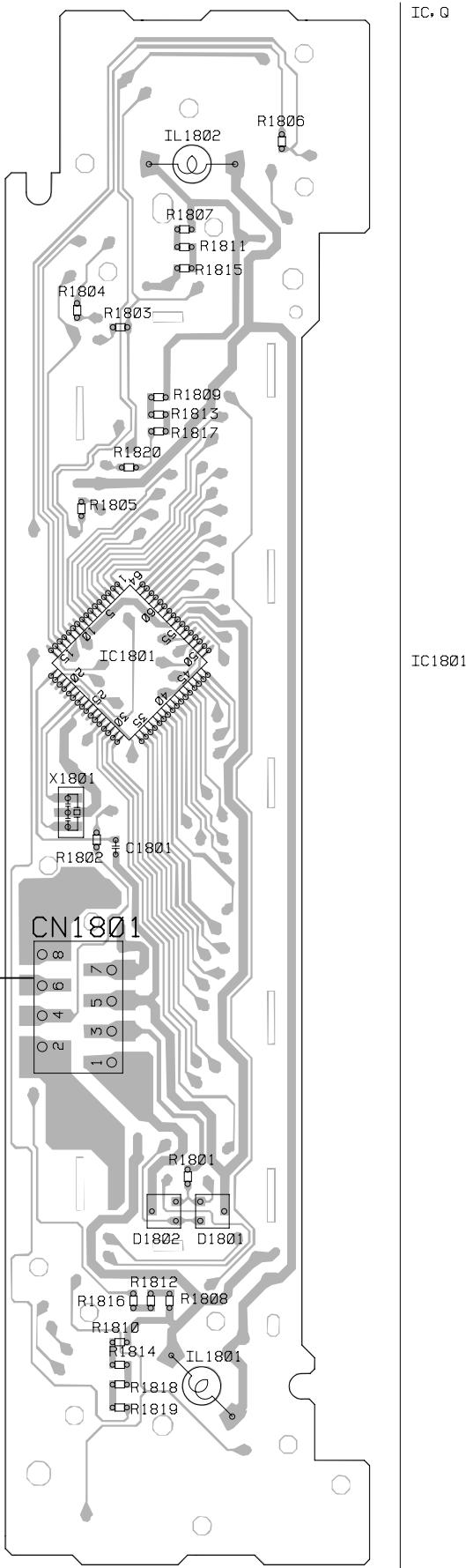
A

B KEYBOARD UNIT



SIDE A

B KEYBOARD UNIT



SIDE B

IC, Q

IC1801

A

B

C

D

E

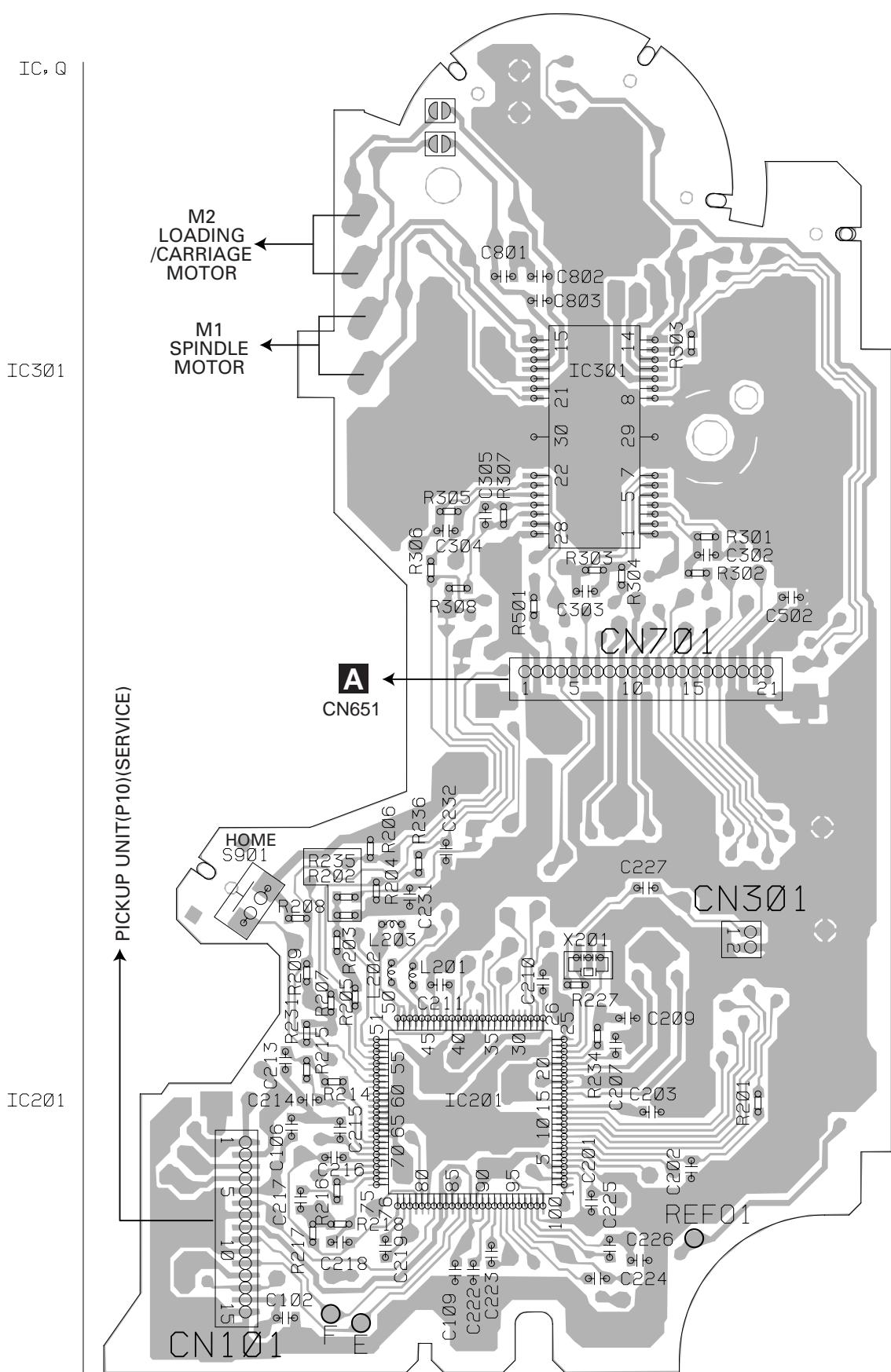
F

4.3 CD MECHANISM MODULE

A

C CD CORE UNIT(S10.1)

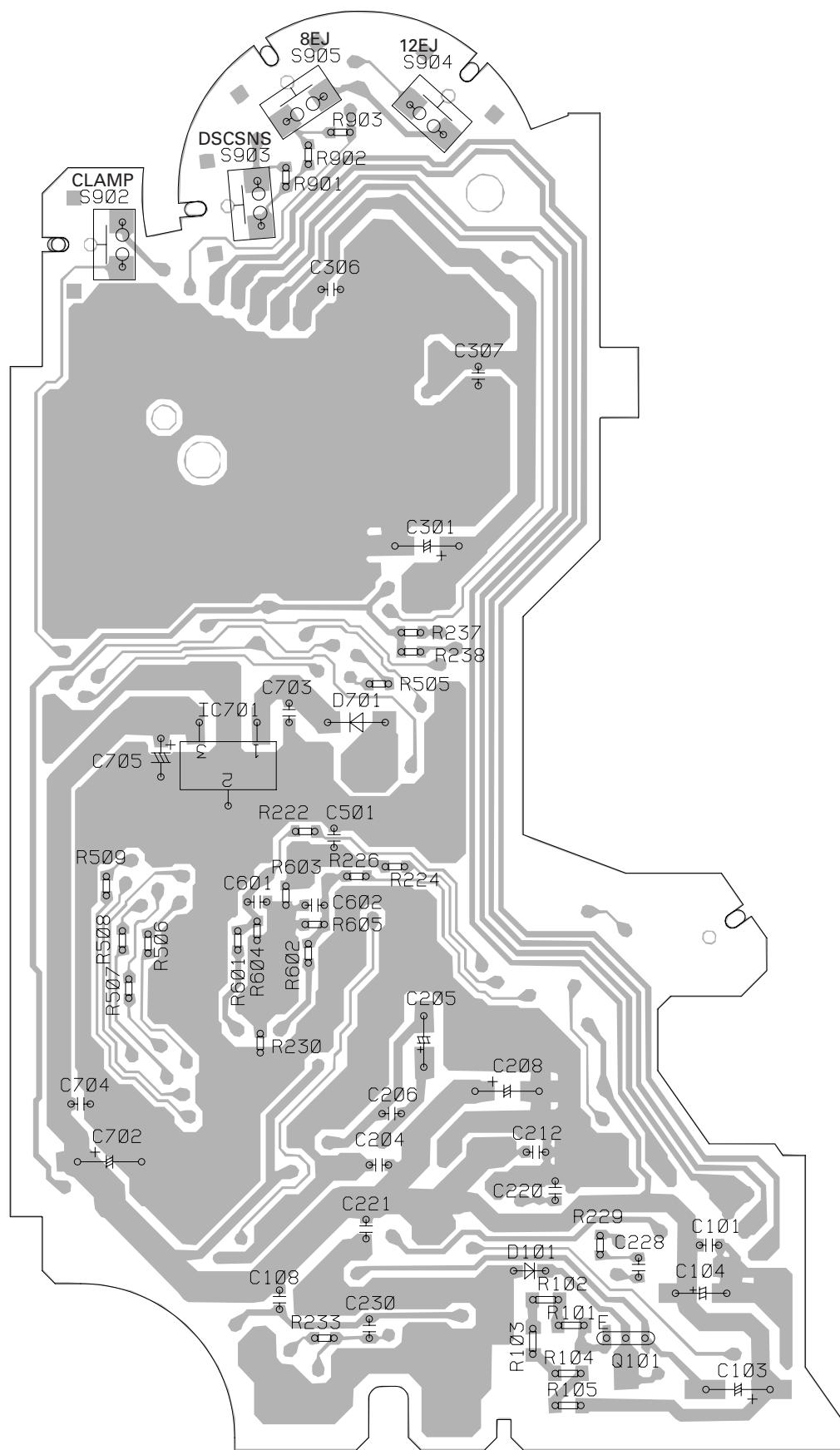
SIDE A



C CD CORE UNIT(S10.1)

SIDE B

A



IC, Q

B

C

IC701

D

Q101

E

F

C

5. ELECTRICAL PARTS LIST

A NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○S○○○J, RS1/○○S○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

	<u>Circuit Symbol and No.</u>	<u>Part No.</u>	<u>Circuit Symbol and No.</u>	<u>Part No.</u>
B	A		D 932	Diode HZA7L(A1)
	Unit Number: YWM5007(DEH-1630R/XU/EW)		D 951	Diode DAN202U
	Unit Number: YWM5001(DEH-1600R/XU/EW)		D 981	Diode S5688G
	Unit Number: YWM5019(DEH-1600RB/XU/EW)		D 982	Diode S5688G
	Unit Name: Tuner Amp Unit		D 983	Diode S5688G
	MISCELLANEOUS		D 991	Diode HZA9L(B1)
C	IC 151	IC	L 151	Inductor LAU2R2K
	IC 302	IC	L 401	Inductor LAU1R0K
	IC 551	IC	L 402	Inductor LAU1R0K
	IC 601	IC	L 404	Ferric-Inductor LAU4R7K
	IC 652	IC	L 601	Inductor LAU1R0K
	IC 961	IC		
	IC 981	IC		
	Q 352	Transistor	L 801	Inductor LAU2R2K
	Q 401	Transistor	L 901	Choke Coil 600μH CTH1280
	Q 402	Transistor	L 951	Inductor LAU2R2K
			X 601	Radiator 12.58291MHz CSS1402
			FU352	Fuse 3A CEK1286
			AR401	Surge Protector DSP-201M-S00B
				Fuse 10A CEK1208
				FM/AM Tuner Unit CWE1645
D	Q 452	Transistor	RESISTORS	
	Q 453	Transistor	DTC124EU	
	Q 801	Transistor	DTA124EU	
	Q 821	Transistor	2SA1036K	R 153 RS1/16S101J
	Q 822	Transistor	2SA1036K	R 154 RS1/16S101J
			DTC114EU	R 155 RS1/16S101J
				R 156 RS1/16S101J
				R 157 RAB4C102J
	Q 911	Transistor	2SD2396	
	Q 912	Transistor	IMD2A	
	Q 921	Transistor	2SD2396	R 301 RD1/4PU153J
	Q 922	Transistor	2SB1243	R 353 RS1/16S821J
	Q 923	Transistor	DTC114EU	R 354 RS1/16S821J
				R 357 RS1/16S223J
				R 358 RS1/16S223J
E	Q 931	Transistor	IMX1	
	Q 951	Transistor	2SA1037K	R 401 RS1/16S223J
	Q 991	Transistor	2SD2396	R 402 RS1/16S223J
	Q 992	Transistor	IMD2A	R 403 RS1/16S223J
	D 452	Diode	DAN202U	R 404 RS1/16S223J
	D 551	Diode	S5688G	R 405 RS1/16S681J
	D 552	Diode	S5688G	
	D 831	Diode	1SS133	R 406 RS1/16S681J
	D 832	Diode	1SS133	R 407 RS1/16S681J
	D 833	Diode	1SS133	R 408 RS1/16S681J
				R 409 RS1/16S681J
				R 410 RS1/16S681J
	D 834	Diode	1SS133	
	D 835	Diode	1SS133	
	D 836	Diode	1SS133	R 414 RS1/16S102J
	D 901	Diode	S5688G	R 418 RD1/4PU221J
	D 902	Diode	S5688G	R 420 RS1/16S681J
F	D 911	Diode	S5688G	R 454 RS1/16S103J
	D 912	Diode	HZA6L(B2)	R 455 RS1/16S153J
	D 921	Diode	HZA9L(B3)	R 456 RS1/16S221J
	D 931	Diode	HZA7L(C3)	R 457 RD1/4PU681J

<u>Circuit Symbol and No.</u>	<u>Part No.</u>	<u>Circuit Symbol and No.</u>	<u>Part No.</u>
R 601	RS1/16S473J	C 152	CKSRYB224K16
R 603	RS1/16S103J	C 153	CKSRYB105K10
R 604	RS1/16S103J	C 154	CKSRYB105K10
		C 155	CEJQ4R7M35
R 605	RS1/16S221J		
R 606	RS1/16S104J	C 156	CEJQ4R7M35
R 607	RD1/4PU222J	C 157	CKSRYB153K50
R 608	RS1/16S0R0J	C 158	CKSRYB153K50
R 609	RD1/4PU473J	C 161	CCSRCH100D50
		C 162	CCSRCH100D50
R 610	RD1/4PU681J		
R 611	RS1/16S473J	C 163	CCSRCH100D50
R 621	RD1/4PU102J	C 164	CCSRCH100D50
R 622	RD1/4PU102J	C 165	CKSRYB104K16
R 633	RS1/16S104J	C 166	CEJQ470M10
		C 167	CEJQ100M16
R 653	RS1/16S104J		
R 654	RS1/16S102J	C 301	CFTNA224J50
R 661	RS1/16S221J	C 302	CFTNA224J50
R 801	RS1/16S153J	C 303	CFTNA224J50
R 802	RS1/16S153J	C 304	CFTNA224J50
		C 309	CKSQYB225K10
R 803	RS1/16S222J		
R 821	RD1/4PU222J	C 310	CKSQYB225K10
R 823	RS1/16S103J	C 311	CEJQ2R2M50
R 833	RD1/4PU222J	C 312	CEJQ100M16
R 834	RD1/4PU222J	C 313	CKSRYB104K16
		C 353	CEJQ2R2M50
R 836	RD1/4PU104J		
R 837	RD1/4PU103J	C 354	CEJQ2R2M50
R 838	RD1/4PU102J	C 401	CKSRYB103K50
R 841	RS1/16S1R0J	C 402	CKSRYB103K50
R 848	RD1/4PU102J	C 403	CEJQ470M6R3
		C 404	CEJQ101M10
R 851	RD1/4PU102J		
R 911	RS1/16S223J	C 405	CKSRYB103K50
R 912	RD1/4PU152J	C 420	CCSRCH470J50
R 921	RS1/16S0R0J	C 451	CEJQ330M10
R 923	RD1/4PU681J	C 551	CKSQYB103K50
		C 552	CKSQYB103K50
R 924	RD1/4PU122J		
R 925	RS1/16S103J	C 601	CKSRYB103K50
R 931	RS1/16S473J	C 604	CCSRCH200J50
R 932	RS1/16S104J	C 605	CCSRCH200J50
R 933	RD1/4PU102J	C 610	CEJQ4R7M35
		C 611	CKSRYB224K16
R 934	RS1/16S472J		
R 935	RS1/16S473J	C 612	CCSRCH470J50
R 936	RS1/16S223J	C 654	CKSRYB104K16
R 940	RS1/16S104J	C 801	CKSRYB104K16
R 941	RS1/16S104J	C 901	3300µF/16V
		C 911	CCH1494
R 951	RD1/4PU153J		CEJQ470M10
R 952	RS1/16S472J	C 912	CKSRYB103K50
R 953	RS1/16S472J	C 913	470µF/16V
R 954	RS1/16S102J	C 921	330µF/16V
R 955	RS1/16S473J	C 922	CCH1331
		C 923	CCH1326
R 961	RS1/16S102J		CEJQ101M16
R 962	RS1/16S822J	C 961	CKSRYB473K50
R 971	RS1/16S0R0J	C 963	CEJQ100M16
R 981	RD1/4PU1R8J	C 981	CKSYB475K10
R 991	RD1/4PU221J	C 982	CKSRYB103K50
		C 983	CEJQ220M16
R 992	RD1/4PU221J		
R 993	RS1/16S222J	C 991	CKSRYB473K50
R 994	RS1/16S472J	C 992	CEJQ101M10

CAPACITORS

C 151

CKSRYB224K16

B**Unit Number: YWM5008(DEH-1630R/XU/EW)**

Circuit Symbol and No.Part No.Circuit Symbol and No.Part No.**Unit Number:YWM5020(DEH-1600RB/XU/EW)****Unit Name:Keyboard unit****MISCELLANEOUS**

IC 1801	IC	PD6340A	D 1805	LED	SML-310PT
D 1801	Diode	MA152WK	D 1806	LED	SML-310PT
D 1802	Diode	MA152WA	D 1807	LED	SML-310PT
D 1803	LED	SML-310VT	D 1808	LED	SML-310PT
D 1804	LED	SML-310VT	D 1809	LED	SML-310PT
D 1805	LED	SML-310VT	D 1810	LED	CL-490S-WF-SD
D 1806	LED	SML-310VT	D 1811	LED	CL-490S-WF-SD
D 1807	LED	SML-310VT	X 1801	Ceramic Resonator 5.00MHz	CSS1547
D 1808	LED	SML-310VT	IL 1801	Lamp 40mA 14V	CEL1651
D 1809	LED	SML-310VT	IL 1802	Lamp 40mA 14V	CEL1651

D 1810	LED	CL-490S-WF-SD	R 1801	RS1/16S222J
D 1811	LED	CL-490S-WF-SD	R 1802	RS1/16S222J
X 1801	Ceramic Resonator 5.00MHz	CSS1547	R 1803	RS1/16S471J
IL 1801	Lamp 40mA 14V	CEL1662	R 1804	RS1/16S471J
IL 1802	Lamp 40mA 14V	CEL1662	R 1805	RS1/16S471J

RESISTORS

LCD1801	LCD(DEH-1630R)	CAW1779	R 1806	RS1/16S471J
LCD1801	LCD(DEH-1600RB)	YAW5006	R 1807	RS1/16S151J

R 1808			R 1808	RS1/16S181J
R 1809			R 1809	RS1/16S181J

R 1810			R 1810	RS1/16S181J
--------	--	--	--------	-------------

R 1801			R 1811	RS1/16S151J
R 1802			R 1812	RS1/16S181J
R 1803			R 1813	RS1/16S181J
R 1804			R 1814	RS1/16S181J
R 1805			R 1815	RS1/16S151J

R 1806			R 1816	RS1/16S151J
R 1807			R 1817	RS1/16S151J
R 1808			R 1818	RS1/16S151J
R 1809			R 1819	RS1/16S131J
R 1810			R 1820	RS1/16S131J

R 1811			CAPACITORS	
R 1812				
R 1813				
R 1814				
R 1815				

R 1816			C 1801	CKSRYB103K50
R 1817			C 1811	CKSRYF104Z25
R 1818			C 1812	CKSRYF104Z25
R 1819				
R 1820				

CAPACITORS

C 1801			IC 201	IC
C 1811			IC 301	IC
C 1812			IC 701	IC
			Q 101	Transistor
			D 101	Diode

B			C	
Unit Number:YWM5002(DEH-1600R/XU/EW)			Unit Number:CWX2947	
Unit Name:Keyboard unit			Unit Name:CD CORE UNIT(S10.1)	

MISCELLANEOUS

F	IC 1801	IC	PD6340A	
	D 1801	Diode	MA152WK	
	D 1802	Diode	MA152WA	
	D 1803	LED	SML-310PT	
	D 1804	LED	SML-310PT	

MISCELLANEOUS

</				

<u>Circuit Symbol and No.</u>	<u>Part No.</u>	<u>Circuit Symbol and No.</u>	<u>Part No.</u>
R 101	RS1/10S1R5J	C 212	CKSRYB104K16
R 102	RS1/10S1R5J	C 213	CKSRYB332K50
R 103	RS1/10S1R5J	C 214	CKSRYB473K25
R 104	RS1/10S1R5J	C 215	CKSRYB104K16
R 105	RS1/10S1R5J	C 216	CKSRYB103K25
		C 217	CCSRCH560J50
R 201	RS1/16S102J		
R 202	RS1/16S1002D	C 218	CCSRCH5R0C50
R 203	RS1/16S1002D	C 219	CKSRYB104K16
R 204	RS1/16S1002D	C 220	CKSRYB104K16
R 205	RS1/16S1002D	C 221	CKSRYB104K16
		C 222	CKSRYB103K25
R 206	RS1/16S1002D		
R 207	RS1/16S1002D	C 223	CCSRCH680J50
R 208	RS1/16S1002D	C 224	CCSRCH470J50
R 209	RS1/16S1002D	C 225	CKSRYB682K50
R 214	RS1/16S103J	C 231	CKSRYB102K50
		C 232	CKSRYB102K50
R 215	RS1/16S393J		
R 216	RS1/16S122J	C 301	100μF/16V
R 217	RS1/16S562J	C 302	CCSRCH221J50
R 218	RS1/16S472J	C 303	CCSRCH221J50
R 234	RS1/16S0R0J	C 304	CKSRYB472K50
		C 305	CKSRYB103K25
R 235	RS1/16S103J		
R 236	RS1/16S103J	C 306	CKSRYB104K16
R 301	RS1/16S183J	C 501	CKSRYB103K25
R 302	RS1/16S822J	C 502	CKSRYB103K25
R 303	RS1/16S183J	C 702	100μF/16V
		C 703	CCH1504
R 304	RS1/16S822J		CKSRYB104K16
R 305	RS1/16S183J	C 705	10μF/6.3V
R 306	RS1/16S183J		CCH1470
R 307	RS1/16S183J		
R 308	RS1/16S183J		
R 501	RS1/16S102J	M 1	Pickup Unit(P10)(Service)
R 503	RS1/16S102J	M 2	Motor Unit(SPINDLE)
R 505	RS1/16S102J		CXB6007
R 506	RS1/16S221J		Motor Unit(LOADING/CARRIAGE)CXB8933
R 507	RS1/16S221J		
R 508	RS1/16S221J		
R 509	RS1/16S221J		
R 601	RS1/16S101J		
R 602	RS1/16S101J		
R 603	RS1/16S0R0J		
R 901	RS1/16S104J		
R 902	RS1/16S473J		
R 903	RS1/16S273J		

CAPACITORS

C 101	CKSRYB104K16
C 102	CKSRYB104K16
C 103	100μF/16V
C 104	47μF/6.3V
C 108	CKSRYB104K16
C 109	CKSRYB104K16
C 201	CKSRYB104K16
C 202	CKSRYB471K50
C 205	22μF/6.3V
C 206	CCH1507
	CKSRYB103K25
C 207	CKSRYB104K16
C 209	CKSRYB104K16
C 210	CKSRYB104K16
C 211	CKSRYB104K16

Miscellaneous Parts List

R 501	RS1/16S102J	M 1	Pickup Unit(P10)(Service)
R 503	RS1/16S102J	M 2	Motor Unit(SPINDLE)
R 505	RS1/16S102J		CXB6007
R 506	RS1/16S221J		Motor Unit(LOADING/CARRIAGE)CXB8933
R 507	RS1/16S221J		

E

6. ADJUSTMENT

6.1 CD ADJUSTMENT

A

1) Cautions on adjustments

- In this product the single voltage (3.3V) is used for the regulator. The reference voltage is the REFO1 (1.65V) instead of the GND.

If you should mistakenly short the REFO1 with the GND during adjustment, accurate voltage will not be obtained, and the servo's misoperation will apply excessive shock to the pickup. To avoid such problems:

a. Do not mix up the REFO1 with the GND when connecting the (-) probe of measuring instruments. Especially on an oscilloscope, avoid connecting the (-) probe for CH1 to the GND.

b. In many cases, measuring instruments have the same potential as that for the (-) probe. Be sure to set the measuring instruments to the floating state.

c. If you have mistakenly connected the REFO1 to the GND, turn off the regulator or the power immediately.

• Before mounting and removing filters or leads for adjustment, be sure to turn off the regulator.

C

• For stable circuit operation, keep the mechanism operating for about one minute or more after the regulator is turned on.

• In the test mode, any software protections will not work. Avoid applying any mechanical or electrical shock to the mechanism during adjustment.

• The RFI and RFO signals with a wide frequency range are easy to oscillate. When observing the signals, insert a resistor of 1k ohms in series.

D

• The load and eject operation is not guaranteed with the mechanism upside down. If the mechanism is blocked due to mistaken eject operation, reset the product or turn off and on the ACC to restore it.

E

F

2) Test mode

This mode is used to adjust the CD mechanism module.

- To enter the test mode.

While pressing the 4 and 6 keys at the same time, reset.

- To exit from the test mode.

Turn off the ACC and back up.

Notes:

a. During ejection, do not press any other keys than the EJECT key until the loaded disc is ejected.

b. If you have pressed the (→) key or (←) key during focus search, turn off the power immediately to protect the actuator from damage caused by the lens stuck.

c. For the TR jump modes except 100TR, the track jump operation will continue even if the key is released.

d. For the CRG move and 100TR jump modes, the tracking loop will be closed at the same time when the key is released.

e. When the power is turned off and on, the jump mode is reset to the single TR (91), the RF amp gain is set to 0dB, and the auto-adjustment values are reset to the default settings.

6.2 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT



• Note :

The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

• Purpose :

To check that the grating is within an acceptable range when the PU unit is changed.

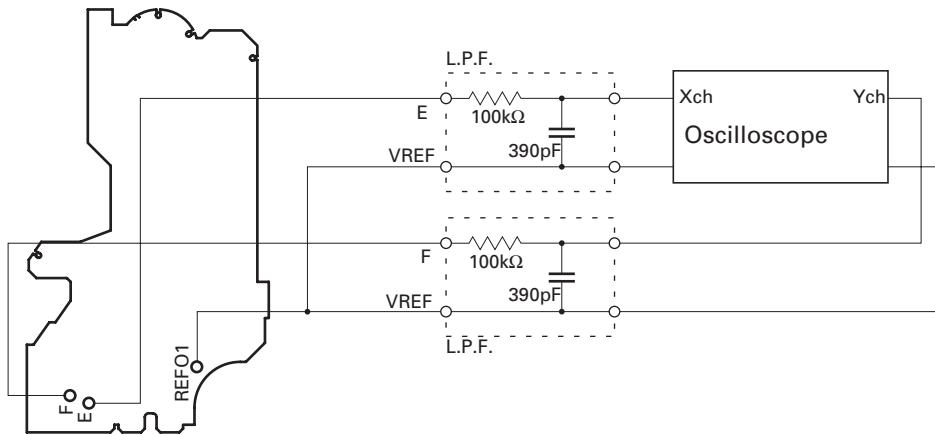
• Symptoms of Mal-adjustment :

If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

• Method :

- Measuring Equipment • Oscilloscope, Two L.P.F.
- Measuring Points • E, F, REFO1
- Disc • ABEX TCD-782
- Mode • TEST MODE

CD CORE UNIT(S10.1)



• Checking Procedure

1. In test mode, load the disc and switch the 3V regulator on.
2. Using the → and ← buttons, move the PU unit to the innermost track.
3. Press key 3 to close focus, the display should read "91". Press key 2 to implement the tracking balance adjustment the display should now read "81". Press key 3. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75° . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

• Note

Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

• Hint

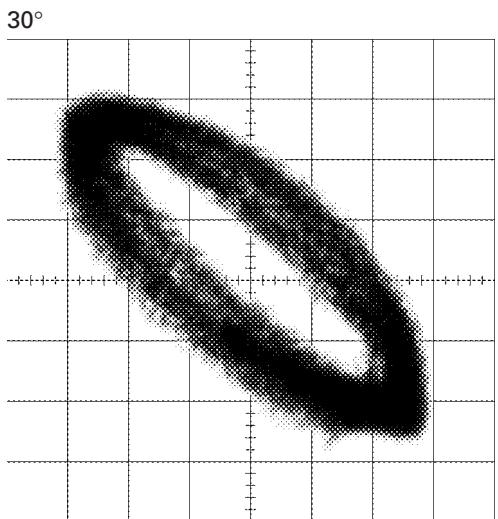
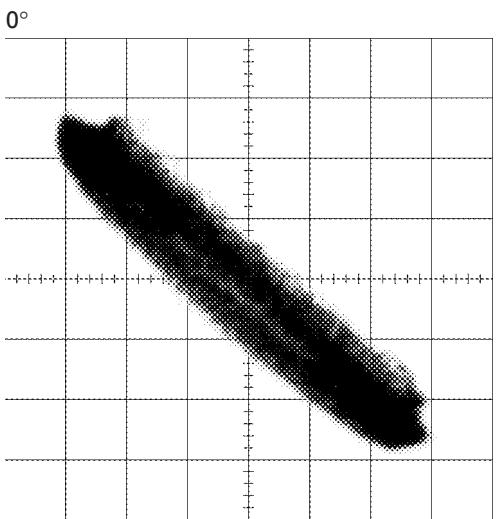
Reloading the disc changes the clamp position and may decrease the "wobble".

Grating waveform

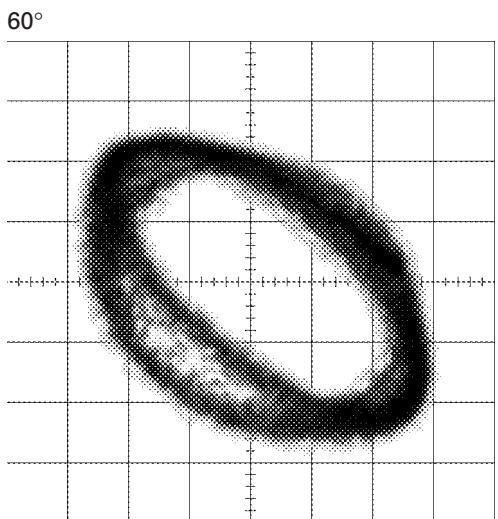
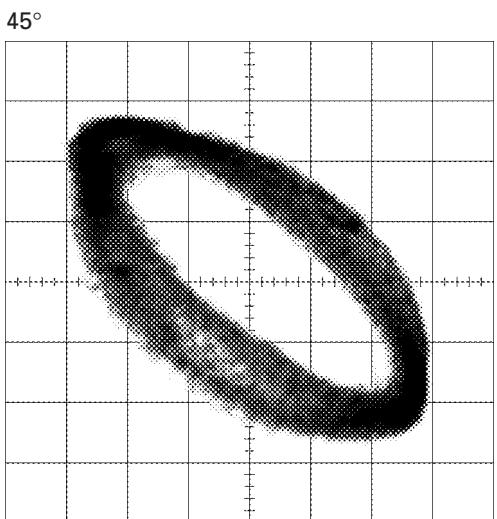
Ech → Xch 20mV/div, AC

Fch → Ych 20mV/div, AC

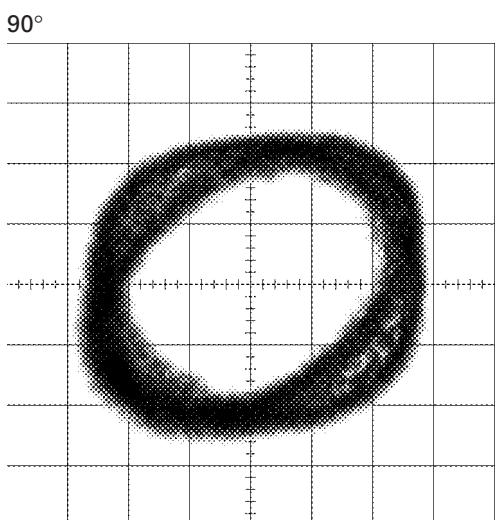
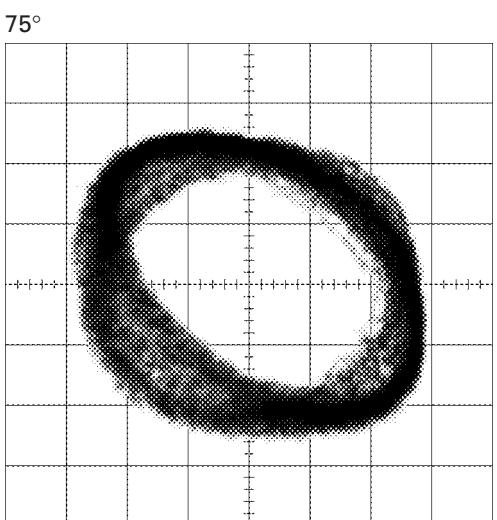
A



B



C



D

E

F

6.3 ERROR MODE

● Error Messages

If a CD is not operative or stopped during operation due to an error, the error mode is turned on and cause(s) of the error is indicated with a corresponding number. This arrangement is intended at reducing nonsense calls from the users and also for facilitating trouble analysis and repair work in servicing.

(1) Basic Indication Method

1) When SERRORM is selected for the CSMOD (CD mode area for the system), error codes are written to DMIN (minutes display area) and DSEC (seconds display area). The same data is written to DMIN and DSEC. DTNO remains in blank as before.

2) Head unit display examples

Depending on display capability of LCD used, display will vary as shown below. xx contains the error number.

8-digit display	6-digit display	4-digit display
ERROR-xx	ERR-xx	E-xx

(2) Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG SERVO LSI Communication Error	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism. Communication error between microcomputer and SERVO LSI.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG Subcode NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations. A disc not containing CD-R data is found. Turned over disc are found, though rarely. CD signal error.
17	Electricity	Setup NG	AGC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations on REWRITABLE.
30	Electricity	Search Time Out	Failed to reach target address. → CRG tracking error or damages on disc.
44	Electricity	ALL Skip	Skip setting for all track. (CD-R/RW)
50	Mechanism	CD On Mech Error	Mechanical error during CD ON. → Defective loading motor, mechanical lock and mechanical sensor.
A0	System	Power Supply NG	Power (VD) is ground faulted. → Failure on SW transistor or power supply (failure on connector).

Remarks: Mechanical errors are not displayed (because a CD is turned off in these errors).

Unreadable TOC does not constitute an error. An intended operation continues in this case.

Upper digits of an error code are subdivided as shown below:

1x: Setup relevant errors, 3x: Search relevant errors, Ax: Other errors.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

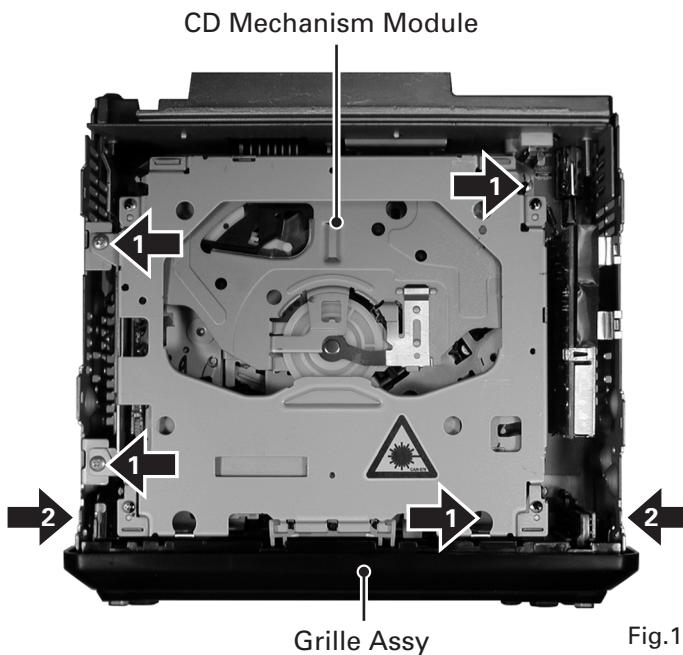
● Removing the Case (not shown)

1. Remove the Case.

● Removing the CD Mechanism Module (Fig.1)

- 1** Remove the four screws.

Disconnect the connector and then remove the CD Mechanism Module.

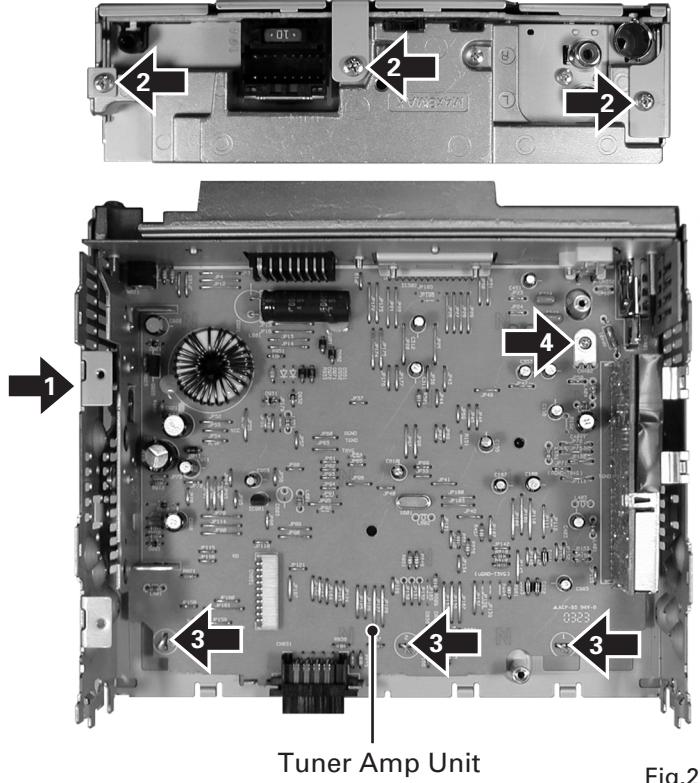


● Removing the Grille Assy (Fig.1)

- 2** Release the two latches and then remove the Grille Assy.

● Removing the Tuner Amp Unit (Fig.2)

- 1** Remove the screw.
2 Remove the three screws.
3 Straighten the tabs at three locations indicated.
4 Remove the screw and then remove the Tuner Amp Unit.

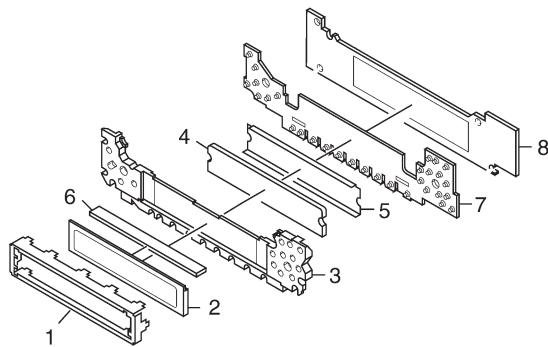


● How to assemble Keyboard Unit

1. Assemble them in order from "1" to "8". (See the figure below.)
2. After that, bend the crows (7 in total) until they get the right angles with the marks printed on "8".

Note) If "5" is not set correctly, defective contact may occur on "6".

To avoid this problem, hold "5" using "7" just before putting "8".



A

B

C

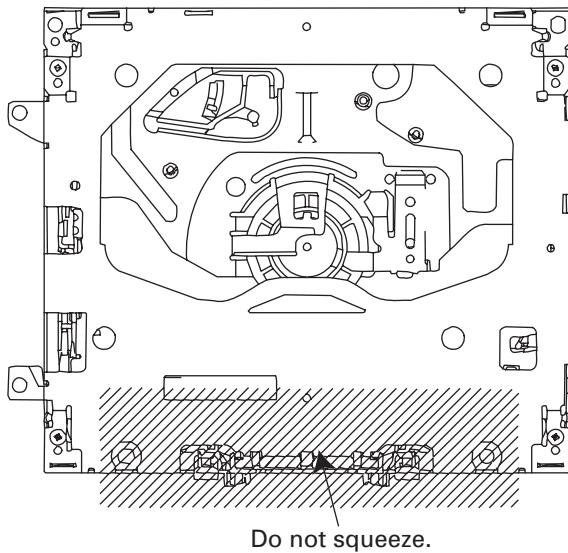
D

E

F

A ● How to hold the Mechanism Unit

1. Hold the top and bottom frame.
2. Do not squeeze top frame's front portion too tight, because it is fragile.

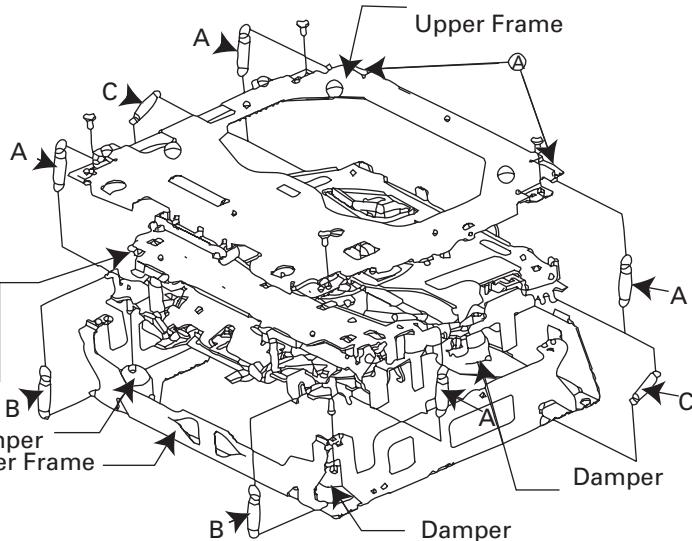


B ● Removing the Upper and Lower Frames

1. With a disc clamped, remove the four springs (A), the two springs (B), the two springs (C), and the four screws.
2. To remove the upper frame, open it on the fulcrum A.
3. While lifting the carriage mechanism, remove the three dampers.
4. With the frames removed, insert the connectors coming from the main unit and eject the disc.

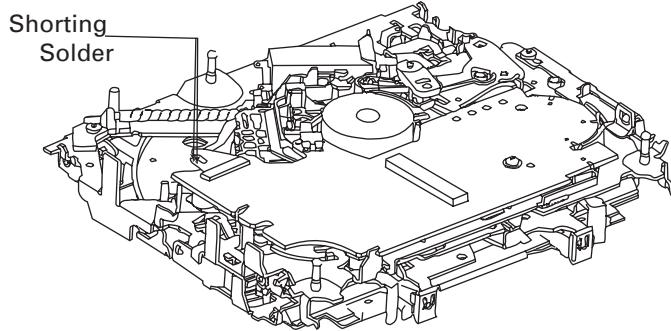
Caution: Before installing the carriage mechanism in the frames, be sure to apply some alcohol to the dampers and set the mechanism to the clamp mode.

Carriage Mechanism

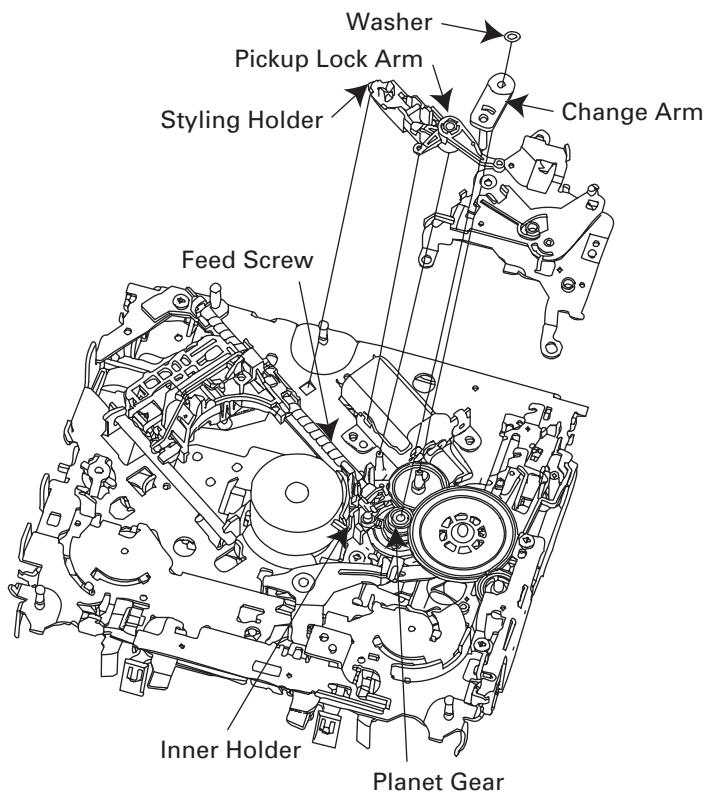


● Removing the Pickup Unit

1. Apply shorting solder to the Pickup flexible cable.
Disconnect the cable.
 2. Set the mechanism to the clamp mode.
 3. Remove the lead wires from the inner holder.
 4. Remove the washer, styling holder, change arm, and pickup lock arm.
 5. While releasing from the hook of the inner holder, lift the end of the feed screw.
- Caution:** In assembling, move the planet gear to the load/eject position before setting the feed screw in the inner holder.



A



C

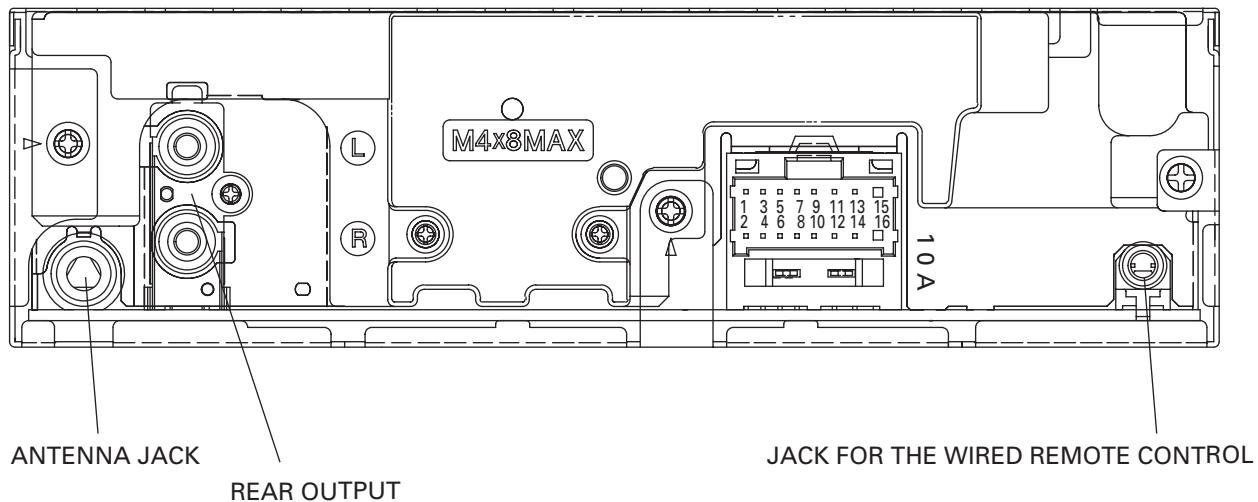
D

E

F

7.1.2 CONNECTOR FUNCTION DESCRIPTION

A



B

C

D

E

F

Pin No.		Pin No.	
1	FR+	9	MUTE
2	RR+	10	-
3	FR-	11	B.REMOTE
4	RR-	12	-
5	FL+	13	-
6	RL+	14	ACC
7	FL-	15	GND
8	RL-	16	B.UP

7.2 PARTS

7.2.1 IC

A

● Pin Functions(PE5329B)

Pin No.	Pin Name	I/O	Function and Operation
1	MODEL1		Model port 1
2,3	NC		Not used
4	AVSS		A/D GND
5,6	NC		Not used
7	AVREF1		A/D converter reference voltage
8	KYDT	I	Key data input
9	DPDT	O	Display data output
10	NC		Not used
11	TUNPDI	I	PLL IC data input
12	TUNPDO	O	PLL IC data output
13	TUNPCK	O	PLL IC clock output
14	PCL	O	Clock adjustment output
15	TESTIN	I	Test program mode input
16	XSI	I	Serial data input
17	XSO	O	Serial data output
18	XSCK	O	Serial data clock output
19,20	NC		Not used
21	SWVDD	O	Keyboard unit power supply control output
22	ILMPW	O	Illumination power supply control output
23	NC		Not used
24	XRST	O	CD LSI reset output
25	XA0	O	CD LSI identification control signal output
26	XSTB	O	CD LSI strobe output
27	CLAMSW	O	Disc clamp switch output (CD)
28	CONT	O	Servo driver power supply control output
29	LOEJ	O	CD load motor LOAD/EJECT direction exchange output
30	CLCONT	O	Driver input select output
31	NC		Not used
32	DALMON	O	Stand-by output
33	VSS1		GND
34	TELIN	O	Telephone mute output
35,36	NC		Not used
37	ROMDATA	O	ROM collection data output
38,39	NC		Not used
40	RECEIVE		During RDS data reception output
41	VDCONT	O	VD control output
42	NC		Not used
43	SYSPW	O	System power supply control output
44	NC		Not used
45	PEE	O	Beep tone output
46	KEY2	I	Key data input (Remote control)
47	NC		Not used
48	MUTE	O	System mute output
49,50	NC		Not used
51	VST	O	Strobe pulse output for electronic volume
52	VDT	O	Data output for electronic volume
53	VCK	O	Clock output for electronic volume
54	NC		Not used
55	TUNPCE2	O	EEPROM chip enable output 2
56	TUNPCE1	O	EEPROM chip enable output 1
57	RDT	O	RDS demodulation data input
58	RDSLK	I	RDS LK signal input
59	RDS57K	I	RDS 57kHz pulse count input
60	RESET	I	Reset input
61	LDET	I	PLL lock sense input
62	RCK	I	RDS demodulation clock input
63	ASENS	I	ACC sense input

B

C

D

E

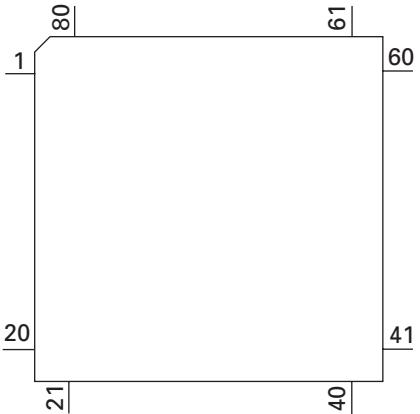
F

	Pin No.	Pin Name	I/O	Function and Operation
A	64	BSENS	I	Back up sense input
	65	DSENS	I	Grille detach sense input
	66	INTRO	I	ATAPI HOST interrupt request input
	67	VSS0		GND
	68	VDD1		Power supply
	69	X2		Crystal oscillator connection pin
	70	X1		Crystal oscillator connection pin
	71	IC(VPP)		Connect to GND
	72	NC		Not used
	73	XT1		Connect to GND
	74	VDD0		Power supply
	75	AVDD		Positive power supply terminal for analog circuit
B	76	SL	I	SD level input from tuner
	77	NC		Not used
	78	VDSENS	I	VD power supply voltage sense input
	79	DISCSENS	I	CD DISC sense input
	80	STRKEY1		Key data (Remote control)

* PE5329B

IC's marked by * are MOS type.

Be careful in handling them because they are very liable to be damaged by electrostatic induction.



D

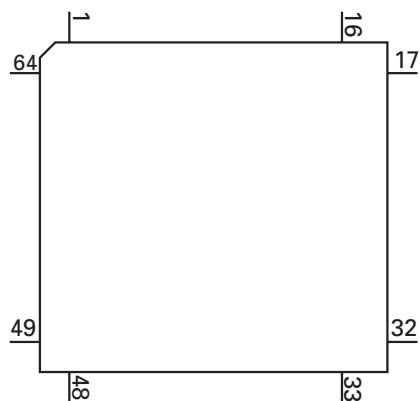
E

F

● Pin Functions(PD6340A)

Pin No.	Pin Name	I/O	Function and Operation
1-5	SEG4-0	O	LCD segment output
6-9	COM3-0	O	LCD common output
10	VLCD		LCD drive power supply
11-14	KST3-0	O	Key strobe output
15,16	KDT0,1	I	Key data input (analogue input)
17	REW	I	Remote control reception input
18	DPDT	I	Display data input
19	NC		Not used
20	KYDT	O	Key data output
21	MODA		GND
22	X0		Crystal oscillator connection pin
23	X1		Crystal oscillator connection pin
24	VSS		GND
25,26	KDT2,3	I	Key data input
27	NC		Not used
28	KST4	O	Key strobe output
29-32	NC		Not used
33-55	SEG35-13	O	LCD segment output
56	VDD		Power supply
57-64	SEG12-5	O	LCD segment output

* PD6340A

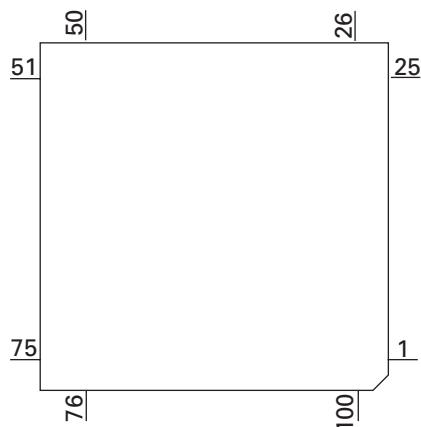


● Pin Functions(UPD63712AGC)

	Pin No.	Pin Name	I/O	Function and Operation
A	1	LD	O	Output of LD
	2	PD	I	Input of PD
	3	PN	I	Assignment of pickup polarity
	4	AVDD		Power supply for the analog system
	5	DGND		Ground for digital circuits
	6	RFOK	O	Output of RFOK
	7	INTQ	O	Interruption signals to the external microcomputer
	8	<u>RST</u>	I	Input of reset
	9	A0	I	Command/Parameter discrimination signal input
	10	<u>STB</u>	I	Data strobe signal input
	11	SCK	I	Serial data clock input
B	12	SO	O	Serial data output
	13	SI	I	Serial data input
	14	DVDD		Power supply for digital circuits
	15	DAVDD		Power supply for DAC
	16	ROUT	O	Output of audio for the right channel
	17	DAGND		GND for DAC
	18	REGC		Connected to the capacitor for band gap
	19	DAGND		GND for DAC
	20	LOUT	O	Output of audio for the left channel
	21	DAVDD		Power supply for DAC
	22	XVDD		Power supply for the crystal oscillator
C	23	<u>XTAL</u>	O	Connected to the crystal oscillator
	24	XTAL	I	Connected to the crystal oscillator
	25	XGND		Ground for the crystal oscillator
	26	DVDD		Power supply for digital circuits
	27	C1D1	O	Information on error correction
	28	C1D2	O	Information on error correction
	29	C2D1	O	Information on error correction
	30	C2D2	O	Information on error correction
	31	C2D3	O	Information on error correction
	32	LOCK	O	Output of LOCK
	33	MIRR	O	MIRR signal
	34	HOLD	O	HOLD signal
D	35	PLCK	O	Output of PLCK
	36	C16M	O	Output of 16.9344MHz
	37	DGND		Ground for digital circuits
	38	TX	O	DAI output
	39	EMPH	O	Pre-emphasis information output
	40	FLAG	O	The flag for which output sound data cannot be corrected is outputted
	41	DVDD		Power supply for digital circuits
	42	LIMIT	I	Signal is inputted when the register can be read
	43	XTALEN	I	Permission to oscillate
	44	DGND		Ground for digital circuits
E	45	DIN	I	Input of audio data
	46	DOUT	O	Output of audio data
	47	SCKIN	I	Clock input for audio data
	48	SCKO	O	Clock output for audio data
	49	LRCKIN	I	Input of LRCK for audio data
	50	LRCK	O	Output LRCK for audio data
	51	DVDD		Power supply for digital circuits
	52	FD+	O	Output of focus drive PWM
	53	FD-	O	Output of focus drive PWM
	54	TD+	O	Output of tracking drive PWM
	55	TD-	O	Output of tracking drive PWM
	56	SD+	O	Output of thread drive PWM
	57	SD-	O	Output of thread drive PWM
	58	MD+	O	Output of spindle drive PWM
F	59	MD-	O	Output of spindle drive PWM
	60	DGND		Ground for digital circuits

Pin No.	Pin Name	I/O	Function and Operation
61	TESTEN	I	Connected to GND
62-66	TEST4-0	I	Connected to GND
67	ADGND		GND for DAC
68	EFM	O	Output of EFM signals
69	ASY	I	Input of asymmetry
70	ADVDD		Power supply for DAC
71	RFI	I	Input of RF
72, 73	EQ2, 1		Equalizer 2, 1
74	RF-	I	Reversal input of RF
75	RF2-	I	Reversal input of RF2
76	AGCO	O	Output of RF
77	AGCI	I	Input of AGC
78	RFO	O	Output of RF
79	ATEST	O	Analog tests
80	C3T		Connection to the capacitor for detecting 3T
81	AGND		Ground for the analog system
82	A	I	Input of A
83	C	I	Input of C
84	B	I	Input of B
85	D	I	Input of D
86	F	I	Input of F
87	E	I	Input of E
88	VREFIN	I	Photo-detector input bias voltage
89	AVDD		Power supply for the analog system
90	REFOUT	O	Output of reference voltage
91	REFC		Connected to the capacitor for output of REFOUT
92	FE-	I	Reversal input of FE
93	FEO	O	Output of FE
94	ADCIN	I	TEST
95	TE-	I	Reversal input of TE
96	TEO	O	Output of TE
97	TE2	O	TE2
98	TEC	I	TEC
99	AGND		Ground for the analog system
100	PWMSW	I	Servo PWM mode switching

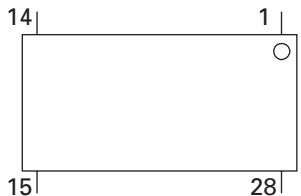
* UPD63712AGC



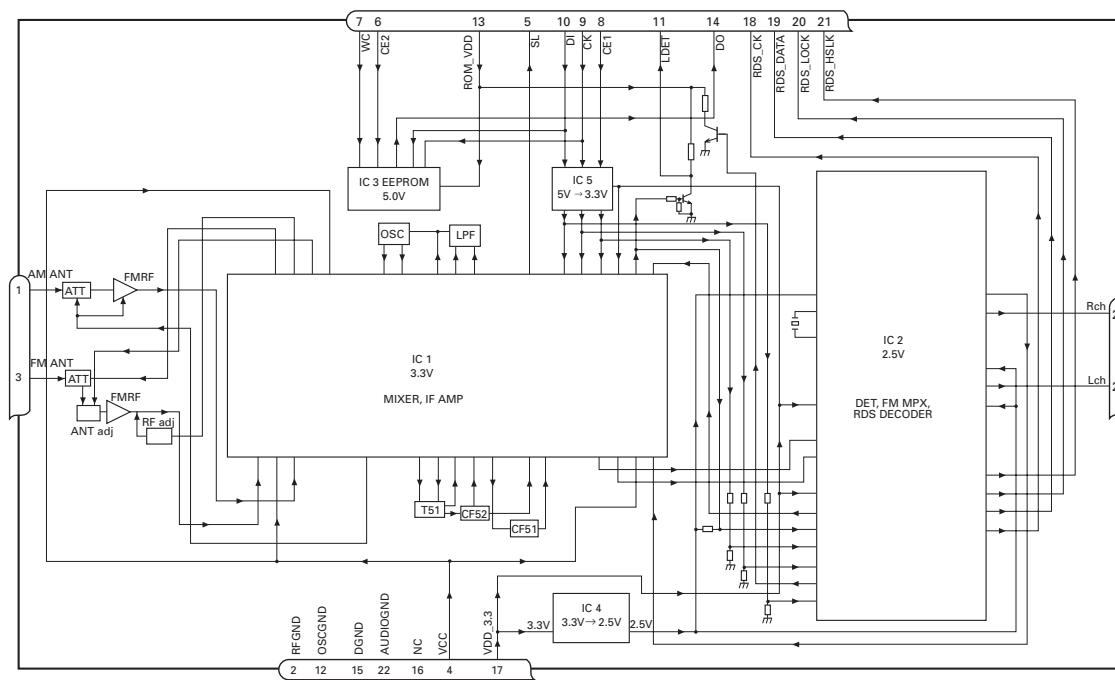
● Pin Functions(BA5835FP)

	Pin No.	Pin Name	Function and Operation
A	1	VR	Input pin for reference voltage
	2	OPIN2(+)	Input pin for non-inverting input for CH2 preamplifier
	3	OPIN2(-)	Input pin for inverting input for CH2 preamplifier
	4	OPOUT2	Output pin for CH2 preamplifier
	5	OPIN1(+)	Input pin for non-inverting input for CH1 preamplifier
	6	OPIN1(-)	Input pin for inverting input from CH1 preamplifier
	7	OPOUT1	Output pin for CH1 preamplifier
	8	GND	Ground pin
	9	MUTE	Mute control pin
	10	POWVCC1	Power supply pin for CH1, CH2, and CH3 at "Power" stage
B	11	VO1(-)	Driver CH1 - Negative output
	12	VO1(+)	Driver CH2 - Positive output
	13	VO2(-)	Driver CH2 - Negative output
	14	VO2(+)	Driver CH2 - Positive output
	15	VO3(+)	Driver CH2 - Positive output
	16	VO3(-)	Driver CH2 - Negative output
	17	VO4(+)	Driver CH4 - Positive output
	18	VO4(-)	Driver CH4 - Negative output
C	19	POWVCC2	Power supply pin for CH4 at "Power" stage
	20	GND	Ground pin
	21	CNT	Control pin
	22	LDIN	Loading input
	23	OPOUTSL	Output pin for preamplifier for thread
	24	OPINLSL	Input pin for preamplifier for thread
	25	OPOUT3	CH3 preamplifier output pin
	26	OPIN3(-)	Input pin for inverting input for CH3 preamplifier
	27	OPIN3(+)	Input pin for non-inverting input for CH3 preamplifier
	28	PREVCC	PreVcc

BA5835FP



● FM/AM Tuner Unit

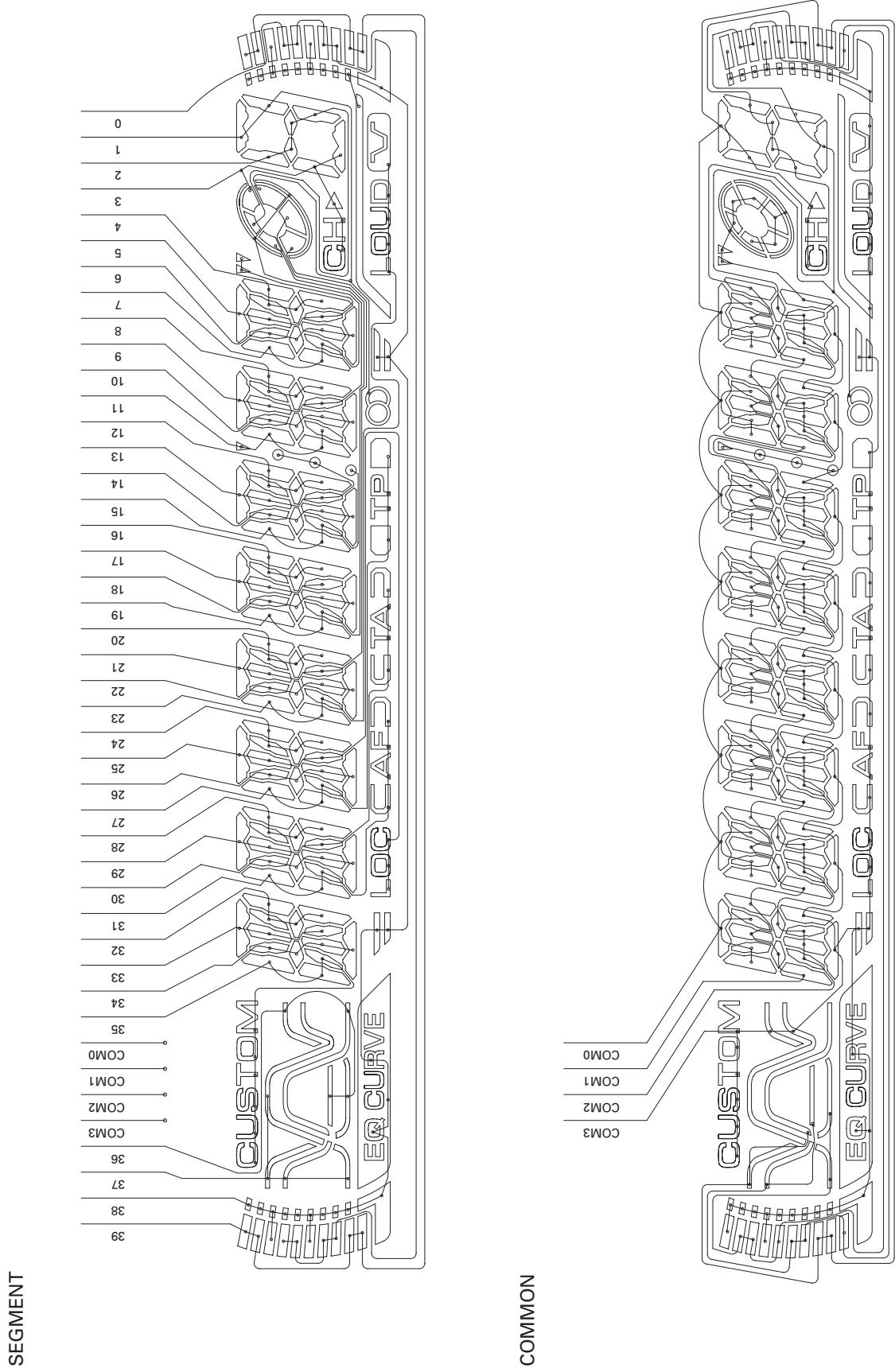


No.	Symbol	I/O	Explain
1	AMANT	I	AM antenna input AMANT pin is connected with an all antenna by way of 4.7μH. (LAU type inductor) A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the ham of power transmission line.
2	RFGND		RF ground Ground of antenna block
3	FMANT	I	FM antenna input Input of FM antenna 75Ω Surge absorber(DSP-201M-S00B) is necessary.
4	VCC		power supply The power supply for analog block. D.C 8.4V ± 0.3V
5	SL	O	signal level Output of FM/AM signals level
6	CE2	I	chip enable-2 Chip enable for EEPROM "Low" active
7	WC	I	write control You can write EEPROM, when EEPROM write control is "Low". Ordinary non connection
8	CE1	I	chip enable-1 Chip enable for AF•RF "High" active
9	CK	I	clock Clock
10	DI	I	data in Data input
11	LDET	O	lock detector "Low" active
12	OSCGND		osc ground Ground of oscillator block
13	ROM_VDD		power supply Power supply for EEPROM pin 13 is connected with a power supply of micro computer.
14	DO	O	data out Data output
15	DGND		digital ground Ground of digital block
16	NC		non connection Not used
17	VDD_3.3		power supply The power supply for digital block. 3.3V ± 0.2V
18	RDS_CK	O	RDS clock Output of RDS clock(2.5V)
19	RDS_DATA	O	RDS data Output of RDS data(2.5V)
20	RDS_LOCK	O	RDS lock Output unit "High" active(2.5V) (RDS_LOCK turns over by the external transistor. "Low" active)
21	RDS_HSLK	O	RDS high speed lock Output unit "High" active(2.5V)(RDS_HSLK turns over by the external transistor. "Low" active)
22	AUDIOPND		audio ground Ground of audio block
23	L ch	O	L channel output FM stereo "L-ch" signal output or AM audio output
24	R ch	O	R channel output FM stereo "R-ch" signal output or AM audio output

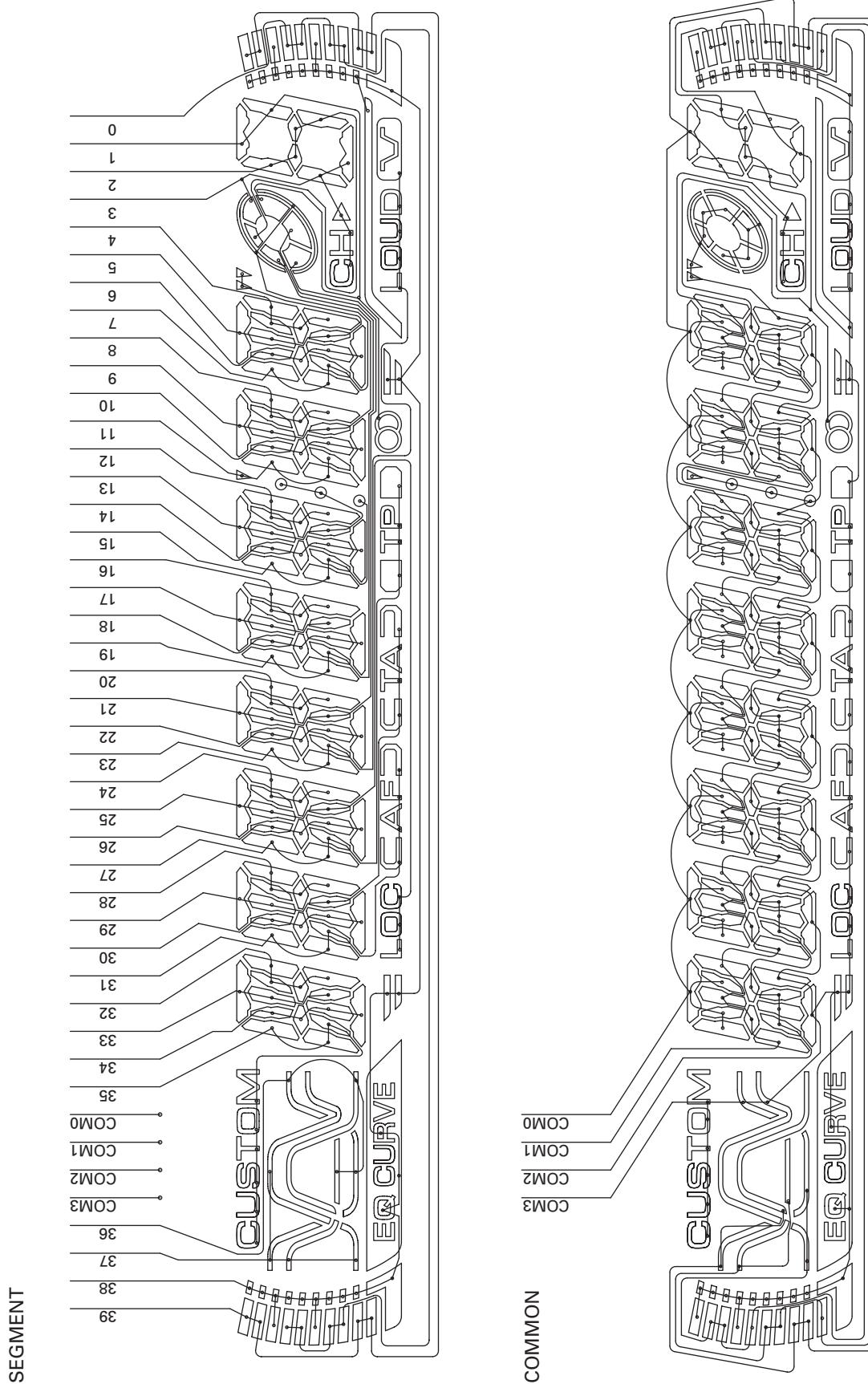
7.2.2 DISPLAY

- LCD(CAW1779(DEH-1630R/XU/EW), CAW1731(DEH-1600R/XU/EW))

A



● LCD(YAW5006(DEH-1600RB/XU/EW))



7.3 OPERATIONAL FLOW CHART

A

B

C

D

E

F

Power ON

VDD1=5V
Pin 68BSENS
Pin 64

BSENS=L

ASENS
Pin 63

ASENS=L

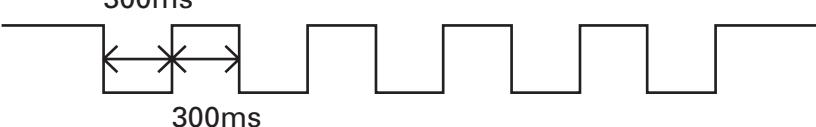
DSENS
Pin 65

DSENS=L

Starts communication with Grille microcomputer.

300ms

300ms

SWVDD←L
Pin 21Source keys
operative

In case of the above signal, the communication with Grille microcomputer may fail.
If the time interval is not 300msec, the oscillator may be defective.

Source ON

SYSPW←H
Pin 43

Completes power-on operation.(After that, proceed to each source operation.)

7.4 CLEANING



A

Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

Portions to be cleaned	Cleaning tools
CD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

B

C

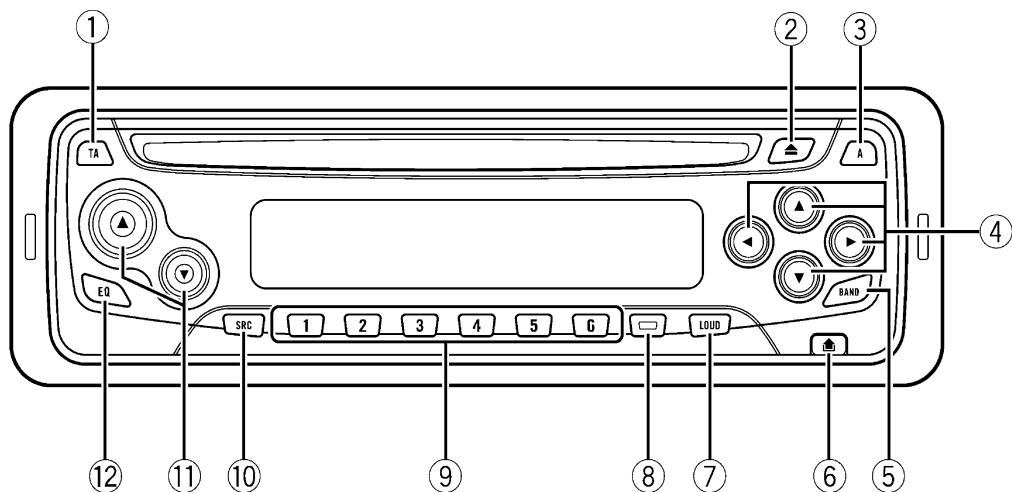
D

E

F

8. OPERATIONS

A



Head unit

① TA button

Press to turn traffic announcements function on or off.

② EJECT button

Press to eject a CD from your built-in CD player.

③ AUDIO button

Press to select various sound quality controls.

④ ▲/▼/◀/▶ buttons

Press to do manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions.

⑤ BAND button

Press to select among two FM and MW/LW bands and cancel the control mode of functions.

⑥ DETACH button

Press to remove the front panel from the head unit.

⑦ LOUDNESS button

Press to turn loudness on or off.

⑧ LOCAL/BSM button

Press to turn local function on or off.
Press and hold to turn BSM function on or off.

⑨ 1-6 buttons

Press for preset tuning.

⑩ SOURCE button

This unit is turned on by selecting a source.
Press to cycle through all of the available sources.

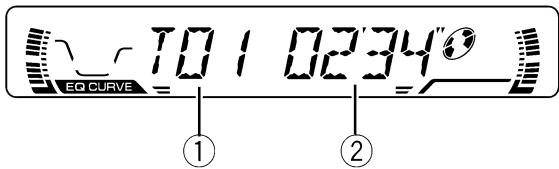
⑪ VOLUME button

Press to increase or decrease the volume.

⑫ EQ button

Press to select various equalizer curves. ■

Playing a CD



① Track number indicator

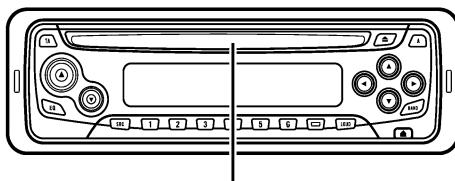
Shows the track currently playing.

② Play time indicator

Shows the elapsed playing time of the current track.

1 Insert a CD into the CD loading slot.

Playback will automatically start.



CD loading slot

- You can eject a CD by pressing **EJECT**.

2 After a CD has been inserted, press SOURCE to select the built-in CD player.

3 Use VOLUME to adjust the sound level.

4 To perform fast forward or reverse, press and hold ▲ or ▼.

5 To skip back or forward to another track, press ▲ or ▼.

Pressing ▼ skips to the start of the next track. Pressing ▲ once skips to the start of the current track. Pressing again will skip to the previous track.



Notes

- The built-in CD player plays one, standard, 12-cm or 8-cm (single) CD at a time. Do not use an adapter when playing 8-cm CDs.

- Do not insert anything other than a CD into the CD loading slot.
- If you cannot insert a disc completely or if after you insert a disc the disc does not play, check that the label side of the disc is up. Press **EJECT** to eject the disc, and check the disc for damage before inserting the disc again.
- If the built-in CD player does not operate properly, an error message such as **ERROR-11** may be displayed.

Repeating play

Repeat play lets you hear the same track over again.

1 Press 5 to turn repeat play on.

RPT appears in the display. The track currently playing will play and then repeat.

2 Press 5 to turn repeat play off.

The track currently playing will continue to play and then play the next track.



Note

If you perform track search or fast forward/reverse, repeat play is automatically cancelled.

Pausing CD playback

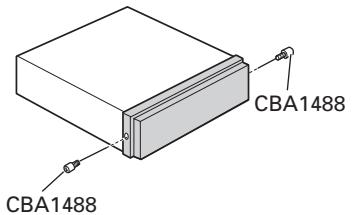
Pause lets you temporarily stop playback of the CD.

1 Press 6 to turn pause on.

PAUSE appears in the display. Play of the current track pauses.

2 Press 6 to turn pause off.

Play will resume at the same point that you turned pause on.



About the fixing screws for the front panel

Fixing screw

If you do not operate the Removing and Attaching the Front Panel Function, use the supplied fixing screws and fix the front panel to this unit.

A

B

C

D

E

F

● CONNECTION DIAGRAM

